International Journal of Humanities and Social Science Research
www.socialsciencejournal.in
ISSN: 2455-2070
Received: 11-07-2025, Accepted: 10-08-2025, Published: 25-08-2025
Volume 11, Issue 4, 2025, Page No. 154-156

Kerala's culinary heritage: A study of traditional foods and their nutritional value

Dr. Niju P[1], Resmi A[2]
[1] Assistant Professor, Department of History, Sree Narayana College, Kollam, Kerala, India
[2] Assistant Professor, Department of Botany, Sree Narayana College, Chempazhanthy, Kerala, India

Abstract
The food culture of Kerala, rooted in more than a millennium of history, reflects the interaction of geography, climate, ritual practices, and trade contacts. Staples such as rice (Oryza sativa L.), black gram (Vigna mungo L.), coconut (Cocos nucifera L.), jackfruit (*Artocarpus heterophyllus*), and banana (*Musa spp*.) formed the dietary foundation of the region. Dishes like idli, dosa, appam, and festive meals such as sadhya evolved not only as sources of nourishment but also as cultural expressions tied to ritual and identity. This paper examines the evolution of these foods, the ecological and climatic factors that sustained them, the impact of early foreign contacts, and the indigenous cooking technologies that gave Kerala's cuisine its distinctive character. It also highlights the nutritional aspects of traditional food items, with emphasis on fermentation, lactic acid bacteria (LAB), and their probiotic health benefits, showing how ancient culinary wisdom aligns with modern nutritional science.

Keywords: Kerala cuisine, traditional foods, sadhya, idli, dosa, appam, fermentation, probiotics, nutritional benefits, culinary heritage

Introduction
Located on the Malabar Coast, Kerala developed a food tradition that grew out of its fertile land, tropical climate, and extensive coastal trade. Rice cultivation, the widespread use of coconut, and the abundance of spices such as pepper and cardamom shaped both everyday meals and ceremonial feasts. References in Sangam poetry (1st–5th c. CE) and medieval temple inscriptions point to the centrality of rice, legumes, and fermented preparations in Kerala's food history. While later colonial introductions such as tapioca and cashew transformed the diet, the region's ancient culinary identity remains tied to its pre-colonial staples and fermentation-based dishes.

Material and Methods
This study is based on a multidisciplinary approach combining historical analysis, ethnographic accounts, and nutritional evaluation. Primary and secondary historical sources such as Sangam literature, temple inscriptions, and colonial records were reviewed to trace the antiquity of Kerala's food practices. Ethnographic descriptions of temple rituals, household traditions, and community food festivals provided insights into the social significance of food. Nutritional perspectives were drawn from contemporary scientific studies that analyzed traditional dishes and their ingredients for calorific values, micronutrient composition, and probiotic content.

Historical Background of Traditional Foods
Kerala's foodways revolved around agriculture and ritual practices. Rice and millets served as the primary staples, while tubers, jackfruit, and coconut enriched diets. Fermented foods such as idli, dosa, appam, and pazhankanji illustrate deep-rooted traditions of microbial food preparation. The sadhya, originally temple offerings, became central to Onam and Vishu celebrations. Ritual foods such as unniyappam, palpayasam, and Pesaha appam represent the intersection of cuisine and spirituality.

Geographical and Climatic Influences
Kerala's ecology profoundly shaped its cuisine. The monsoons sustained paddy cultivation, especially in Kuttanad, while the Western Ghats provided pepper, cardamom, and ginger. Coastal regions encouraged the cultivation of coconut and banana. The tropical climate, marked by high humidity, favored fermentation, ensuring the popularity of foods like idli, dosa, and appam.

Foreign and Cultural Contacts
Kerala's position on the spice route fostered contact with diverse cultures. Arab traders introduced breads such as pathiri, while Chinese exchanges contributed steaming techniques. Syrian Christian traditions incorporated Pesaha appam, and Portuguese colonial encounters added tapioca, cashew, and chili, which later integrated into regional diets.

Cooking Methods of Traditional Kerala Foods
Traditional cooking emphasized eco-friendly and nutrient-preserving techniques. Steaming was employed for idli and puttu, while fermentation enhanced dosa, appam, and kallappam. Clay pots imparted earthy flavors, and stone grinding of grains ensured smooth, nutrient-rich batters. Serving food on banana leaves added aroma and reinforced sustainable dining practices.

Nutritional Perspectives of Traditional Kerala Foods
Idli: Light and digestible, with 39 kcal, 8 g carbohydrates, 2 g dietary fiber, and 2 g protein per serving. Fermentation increases nutrient bioavailability and supports digestion and weight management.

Dosa: Thin, crisp, and gluten-free, with 120 kcal, 17 g carbohydrates, 2 g protein, 1 g fiber, and 3 g fat. Fermentation boosts iron and zinc bioavailability while providing gut-friendly probiotics.

Appam: A soft rice pancake enriched with coconut milk, providing 120 kcal, 20 g carbohydrates, 4.1 g fiber, and 10 g

fat. Toddy fermentation enhances antimicrobial and probiotic potential.

Puttu: A steamed cylindrical rice-coconut dish, high in fiber and low in fat, aiding digestion and promoting satiety.

Pazhankanji: Fermented rice gruel, rich in probiotics, electrolytes, and easily digestible starch, traditionally consumed as a cooling breakfast.

Unniyappam: A fried sweet rice cake with jaggery and banana, offering energy, iron, and natural sugars, often associated with temple offerings.

Nutritional Composition of Core Ingredients

Rice (Oryza sativa L.): 75–80% starch, lysine-rich protein, and essential minerals such as calcium, magnesium, phosphorus, iron, manganese, and zinc. Contains bioactive compounds like flavonoids, carotenoids, and phenolics.

Black Gram (Vigna mungo L.): High in protein, potassium, calcium, magnesium, iron, and vitamin B6. Plant proteins from black gram aid in satiety, weight management, and kidney health.

Jackfruit (*Artocarpus heterophyllus*): Energy-rich with dietary fiber, vitamin C, potassium, and carotenoids. Its seeds are protein-dense and traditionally consumed boiled or roasted.

Banana (*Musa spp*.): Provides carbohydrates, potassium, and vitamin B6. Its high fiber content supports digestion, while resistant starch functions as a natural prebiotic.

Coconut (Cocos nucifera L.): Supplies medium-chain triglycerides (MCTs), lauric acid, and dietary fiber, offering antimicrobial and metabolic health benefits.

Fermentation, Probiotics, and LAB in Kerala Cuisine

Fermentation enhances flavor, digestibility, and shelf life while introducing lactic acid bacteria (LAB). Kerala's fermented foods include Lactobacillus plantarum, which suppresses pathogens and colorectal cancer risk, and Enterococcus hirae, which shows probiotic potential. LAB bacteriocins inhibit harmful bacteria such as Staphylococcus aureus and Listeria monocytogenes.

Results and Discussion

Analysis of Kerala's traditional foods reveals a deep interconnection between ecological resources, cultural practices, and nutritional benefits. Historical evidence confirms that fermentation-based foods were staples in the region for over a thousand years. Nutritional evaluations demonstrate that these dishes are rich in proteins, fibers, essential minerals, and probiotics. The combination of rice and black gram ensures balanced amino acid intake, while the inclusion of coconut, jackfruit, and banana adds micronutrient diversity.

Traditional cooking methods such as steaming and stone grinding preserve the natural qualities of food and enhance digestibility. Probiotic-rich dishes like idli, dosa, appam, and pazhankanji continue to play a vital role in gut health, immunity, and chronic disease prevention. The study highlights that Kerala's age-old food practices, while rooted in ritual and culture, are scientifically validated as functional foods in modern nutrition.

Conclusion

Kerala's traditional cuisine, deeply rooted in its climate, ecology, and cultural rituals, illustrates the continuity of food heritage over a millennium. Staples such as rice, black gram, coconut, jackfruit, and banana ensured sustenance, while fermentation made them probiotic-rich functional foods centuries before modern science acknowledged their benefits. Kerala's cuisine thus represents both a cultural treasure and a timeless contribution to health and well-being.

References

1. Achaya KT. Indian Food. A Historical Companion. Oxford University Press, 1994.
2. Gupta A, Tiwari SK. Probiotic potential of bacteriocin-producing Enterococcus hirae strain LD3 isolated from dosa batter. Annals of Microbiology,2015:65(4):2333–2342.
3. Latha S, Sankaranarayanan A, Amaresan N, Dhanasekaran D. Ethnic probiotic foods of South India and their health benefits. In Sankaranarayanan A, Amaresan N, Dhanasekaran D, editors. Fermented Food Products. CRC Press, 2019, 77–92.
4. Moktan B, Roy A, Sarkar PK. Antioxidant activities of cereal-legume mixed batters during preparation of dhokla and idli. International Journal of Food Sciences and Nutrition,2011:62(4):360–369.
5. Narayanan MGS. Perumals of Kerala. Brahmin Oligarchy and Ritual Monarchy. Cosmo Books, 1996.
6. Pal V, Jamuna M, Jeevaratnam K. Isolation and characterization of bacteriocin-producing lactic acid bacteria from dosa batter. Journal of Culture Collections,2005:4:53–60.
7. Panikkar KM. A History of Kerala 1498–1801. Annamalai University, 1931.
8. Sankaranarayanan A, Amaresan N, Dhanasekaran D, editors. Fermented Food Products. CRC Press, 2019.
9. Satish Kumar R, Kanmani P, Yuvaraj N, Paari KA, Pattukumar V, Arul V. *et al*. Traditional Indian fermented foods a rich source of lactic acid bacteria. International Journal of Food Sciences and Nutrition,2013:64(4):415–428.
10. Satish Kumar R, Kanmani P, Yuvaraj N, Paari KA, Pattukumar V, Arul V. *et al*. Lactobacillus plantarum AS1 isolated from South Indian fermented food Kallappam suppress colorectal cancer in rats. Applied Biochemistry and Biotechnology,2012:166:620–631.
11. Shaheen S, Bukhari SA, Qasim M. Comparative nutritional analysis between Vigna radiata and Vigna mungo. African Journal of Biotechnology,2012:11(25):6694–6702.
12. Shenoy A, Jose J, Al-Khalifa AR, Al-Juhaimi FY, *et al*. Role of nutraceuticals and functional foods in metabolic syndrome. In: Gupta VK, Treichel H, Shapaval V, *et al*., editors. Functional Foods and Nutraceuticals in Metabolic and Non-Communicable Diseases. Academic Press, 2022, 583–601.
13. Verma DK, Srivastav PP. Bioactive compounds of rice Oryza sativa L. Trends in Food Science Technology,2020:97:355–365.

14. Zvelebil K. The Smile of Murugan On Tamil Literature of South India. Brill, 1973.
15. Rajan S, Murugan K, Manohar B. Nutritional and therapeutic values of jackfruit *Artocarpus heterophyllus* Lam. Journal of Food Science and Technology,2019:56(4):1691–1700.
16. Thomas J, Jacob J, George R, Mathew J. Traditional rice varieties of Kerala and their nutritional significance. Indian Journal of Traditional Knowledge,2019:18(2):360–368.
17. Kumar V, Mahato DK, Kamle M, Mohanta TK, Kang SG. Aflatoxins A global concern for food safety human health and their management. Frontiers in Microbiology,2016:7:2170.
18. Jayalekshmi LS, Divya P, Nair AG. Nutritional perspectives of banana *Musa spp*. in Kerala cuisine. Journal of Ethnic Foods,2020:7(1):15–22.
19. Mohanty S, Mishra S, Jena D. Coconut-based functional foods. An overview. Journal of Food Biochemistry,2021:45(2):13586.
20. Nambiar VS, Balasubramanian R, Kaur A. Probiotic potentials of fermented rice gruel pazhankanji consumed in South India. Journal of Food Science and Human Wellness,2023:12(1):98–106.