

AN INTERDISCIPLINARY APPROACH ON MEDICINAL BENEFITS THROUGH TRADITIONAL TAMIL CUISINE

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மாறுபாடு இல்லாத உண்டி மறுத்துண்ணின் (945)

- ஊறுபாடு இல்லை உயிர்க்கு திருவள்ளுவர்

ABSTRACT:

Man's basic drive is for food to satisfy his hunger. The fundamental drive for food is a primal force that underpins human existence, intimately linked to the physical, economic, psychological, intellectual and social dimensions of life. Beyond mere sustenance, food carries deep cultural meanings and symbolisms, evolving with individuals across different life stages. One of the most fundamental needs for human survival is food, even more so than clothing or shelter. By supplying essential nutrients such as carbohydrates, proteins, lipids, vitamins, minerals, and water, it promotes the human body's growth, development, maintenance, and repair. In this regard, Tamil Nadu's traditional culinary culture serves as an example of how nutrition, cultural customs, and medical practices are closely related. Rich in herbs, spices, and whole foods with therapeutic properties, Tamil Nadu's culinary practices harness ingredients like turmeric, ginger, curry leaves, tamarind, and fenugreek to offer anti-inflammatory, antioxidant, digestive and immune-boosting benefits. Furthermore, staples such as lentils and coconut contribute to heart health, blood sugar regulation and holistic well-being. Closely aligned with Ayurvedic principles, Tamil Nadu's traditional dietary practices emphasize balance and the use of natural, locally sourced ingredients, providing a sustainable, preventative approach to chronic disease management and promoting overall health. Hence, this present paper highlights how traditional Tamil food systems can serve as powerful vehicles for both nourishment and natural healing. This study made an attempt to analyze nutritive value of common Tamil foods and its ingredients and also attempt to explore the various welfare schemes implemented by central as well as state government in order to achieve Zero Hunger policy, which is one of main goal of sustainable Development Goals. For this study both analytical as well as interpretative methodologies are adopted.

Key words: Tamil Cuisine, Medical Benefits, Thirukural, concept of food, schemes.

INTRODUCTION

Tamil Nadu, a land with a rich history and culture, boasts a unique culinary tradition. The saying 'food is medicine' is deeply ingrained in Tamil food habits, a practice evident in ancient Tamil literature like the *Pattupattu* and *Ettutokai*. Each ingredient was carefully chosen and prepared according to its properties and the season, reflecting a deep understanding of nutrition and well-being.

Traditional Tamil Nadu cuisine, known for its rich flavors and diverse array of ingredients, not only serves as a source of nourishment but also offers numerous medicinal benefits. Rooted in centuries-old culinary traditions, this cuisine integrates locally grown, seasonal ingredients, many of which possess therapeutic properties. The use of fresh herbs, spices and natural remedies has long been a cornerstone of Tamil cooking, closely tied to holistic health practices found in Ayurveda and other traditional healing systems. In Tamil Nadu, food is often viewed as medicine, where the right combination of ingredients can aid in digestion, boost immunity, reduce inflammation and prevent chronic diseases. Spices such as turmeric, ginger, cumin and curry leaves, along with nutrient-rich vegetables, pulses and fermented foods, are central to this approach. These ingredients are widely regarded as beneficial for maintaining good health. They help support proper digestion, assist in controlling blood sugar levels, contribute to heart health, and promote overall well-being. The therapeutic value of Tamil cuisine lies in its balanced use of flavors and its reliance on natural ingredients that not only enhance taste but also provide important health benefits. By focusing on food that nourishes both the body and the mind, traditional Tamil cuisine offers a holistic approach to wellness that has been passed down through generations.

The historical Tamil culinary scene, spanning from the third to fifteenth centuries CE, is richly documented in Sangam literature, including works like *Perunaṭṭupatai*, *Cirupaṭṭupatai*, *Puraṇanūru*, *Tolkappiyam*, *Kuruntokai*, and *Paṭṭiṇappalai*. These texts detail the food and eating habits of ancient Tamils, describing meals served in ordinary homes and royal courts. The historical timeline is marked by the Chera, Chola and Pandya kingdoms of South India. Culinary practices adapted to the environment, with ingredients and methods changing over time. For instance, the Tamil painting, *Cirpanaṭṭupatai*, depicts royal rice as being particularly sweet and used as a form of barter. Sangam literature also describes elaborate food presentations, with practices influencing European culinary traditions. Meat and alcoholic beverages like *Somapanam* were served to poets in royal courts. Dishes like *Kuzhambu* (gravy), *Salna* (stew), *Sambar*, *Methuvada*, *Idly* and *Dosa* existed in some form, prepared with available ingredients. Royal feasts could include 160 dishes, prepared by as many as eighty two cooks. Royal kitchens guarded secret recipes, often written in code. The Maharaja's kitchen was renowned for its complex recipes. Ingredients like onions, tomatoes, garlic, cloves, refined oil and sugar were unavailable during the Sangam period. It's hard to imagine modern Tamil cuisine without these ingredients. Early Tamil cuisine relied mainly on ingredients such as pepper, coriander, coconut, honey, ginger, turmeric, tamarind, mustard seeds and ghee. Several ingredients commonly used today, including tomatoes, refined oils and certain spices, were introduced in later centuries. During the Vijayanagara period, new cooking oils such as peanut oil became popular and contributed to the development of fried dishes. Temples played a significant role in the evolution of Tamil food, with Bhakti movement influencing changes in culinary practices.

REVIEW OF LITERATURE

Numerous sources are available for this research, including Sangam literature such as *Agananuru*, *Purananuru*, *Ettutogai*, *Pathinenkeelkanakku*, *Natrinal*, etc. These materials are highly helpful for this study and provide a wealth of information about the variety of foods that were common in ancient Tamil Nadu.

Thirukural: மருந்தெனவேண்டாவாம்யாக்கைக்கு அருந்தியது, அற்றது போற்றி உணின். (942)

Natrinai: எல்லிவந்தநல்இசைவிருந்திற்கு கிளர்கிழைஅரிவைநெய்துழந்து

அட்டவிளர்ஊன்அம்புகைஎறிந்த நெற்றிசிறுநுண்பல்வியர்பொறித்த

குறுநடைக்கூட்டம்வேண்டுவோரை- 41(5, 10). The Natrinai use Sangam cuisine and cooking methods. They are a result of the way their food population lives. It is dependent upon the economic and material circumstances; *Thanipadalthiratu* : வரகரிசிச்சோறும்வழுதுணங்காய்வாட்டும்,

முரமுரெனவேபுளித்தமோரும்- திரமுடனே, புல்வேளூர்ப்பூதன்புரிந்துவிருந்துஇட்டான்ஈது

எல்லாஉலகும்பெறும்(32). Other sources like S. Namasivayam's *TamizharUnavu* and V.C. Sasivalli's *PantaitTamizharThozhilgal*, gives a lot of information about traditional Tamil foods. A. Dachinamurthi's *Tamil Civilization and Culture* describes the diverse diet of ancient Tamils, varying based on region and social class and it also gives details on traditional cooking methods. M. Swaminathan's *Handbook of Food and Nutrition*, Gopalan, C., Rama Sastri, B.B., Balasubramanian, S.C., ShakuntalaManay N., M. Shadaksharaswamy's *Foods Facts and Principles and Nutritive Value of Indian Food* gives many information about list of food products with their nutritive values.

NUTRITIVE VALUE OF TAMIL CUISINE

Just as a man without clothes is half a man, a man without food is lifeless. Among the basic necessities of life – food, clothing, and shelter – one can survive without clothing and shelter, but no one has ever survived without food. The *Purananuru* states, “உணவெனப்படுவதுநிலத்தொடுநீரே” (Food is the earth and water). Food is the lifeblood of man; without food, there is no world. The morality, ethics and excellence of the world are all contained within food. That is why the *Purananuru* says, “உண்டிகொடுத்தோர்உயிர்கொடுத்தோரே” (He, who gives food gives life). When it comes to growing a wide range of grains, fruits, vegetables, nuts, and oilseeds as well as raising birds and animals for food, man has shown a great deal of consideration and foresight. Through trial and error and ongoing use, the best foods to promote good health have been discovered. The nutritional requirements and nutritional value of foods are now well-documented. The observations made by a number of pioneers in the late 19th and early 20th centuries served as the foundation for the current understanding of nutrition. Numerous scientists' studies have demonstrated that foods contain a variety of chemical components that are referred to as nutrients. Minerals, vitamins, proteins, fats, and carbs are among them. The amounts of different nutrients in foods vary greatly. Depending on their nutritional value, foods can be broadly categorized into different groups. Cereals and millets; legumes (pulses); oilseeds and nuts; vegetables; fruits; fats and oils; foods derived from animals; milk and milk products; starchy and sugary foods and Spices and condiments. The object of processing and cooking is threefold: to improve their digestibility and appearance; to develop new flavours and to destroy harmful microorganisms present. The important processing and cooking methods are the following: boiling in water; steaming; baking; roasting; frying, canning and dehydration.

Prior to the invention of cutlery in the British era, people of Tamil Nadu traditionally ate food with their hands. Senior family members and elders usually ate meals on the floor first, followed by younger family members. Twelve distinct ways of eating were identified in ancient Tamil texts, ranging from sipping to chewing and swallowing. Banana leaves were commonly used for serving food, particularly during feasts and community meals. This practice was widespread in both India and Sri Lanka due to the easy availability and affordability of banana leaves. Even today, many restaurants use banana leaves to serve food, promoting hygiene and reducing water usage. Traditional Tamil hospitality is closely linked to the concept of ‘*thinna*’ (veranda) houses. These verandas served as social spaces, accommodating guests, facilitating business interactions and even providing informal education for children. They also provided shelter for travellers. The preparation of a traditional Tamil feast involves meticulous steps, from preparing the banana leaves to arranging the dishes in a specific order. The arrangement of dishes on the banana leaf follows a specific pattern, with side dishes arranged on the upper part of the leaf and rice and main curries on the lower part. Betel leaves and areca nuts are integral to Tamil culture, often used in ceremonies and social gatherings. It’s crucial to remember that areca nuts should not be consumed alone, as this can cause health problems. Sweet, sour, salty, bitter, Pungent and Astringent are the six primary categories of taste that humans can detect. Sweetness indicates sugars that are high in energy, while bitterness might alert us to potentially toxic compounds. Each flavor aids in the detection of various nutrients. Amino acids are linked to umami (a savory taste) and are present in foods high in protein. These flavors are picked up by taste buds on the tongue and other oral tissues, which then communicate with the brain for interpretation. The benefits of each taste are listed in **Table 1**. In various regions of India, food is prepared in a variety of ways. Over the ages, numerous recipes have been developed. Regional variations in the ingredients used in recipes are significant. Data regarding the ranges of values for different nutrients for groups of recipes are given in **Table 2**.

TABLE 1 (TYPES OF TASTE AND ITS NUTRITIVE BENEFITS)

Sl. No.	LISTS OF TASTE	BENEFITS
1.	Sweet	Sweet contains Carbohydrates, sweet fruits, grains, root vegetables, beets, sugar, licorice stimulates salivation, strengthens the heart.
2.	Sour	Sour contains limes, sour fruit, alcohol, vinegar. Helps digestion, reduces gas, increases circulation, and sharpens senses.
3.	Salty	Salt contains any food containing salt calming to the nerves, improves digestion, maintains electrolyte balance in the body
4.	Pungent	Pungent contains jalapeños, ginger, black pepper, cloves, cayenne pepper, garlic and wasabi, horseradish Improves metabolism, helps digestion and absorption, reduces congestion
5.	Bitter	Bitter contains Fenugreek, black tea, green leafy vegetables, bitter melon. Constricts blood vessels, stops bleeding, promotes healing, antibacterial

TABLE 2 (NUTRITIVE VALUE OF COMMON INDIAN RECIPES)

(Range of values per 100 g. recipe)

Nutrients	Rice	Wheat	Millets	Pulses	Vegetables	Milk	Egg, meat and fish
Calories (Kcal)	84-244	118-487	133-289	15-192	110-266	18-164	172-220
Protein (g)	2.0-6.9	2.2-8.8	2.4-6.8	0.8-9.5	1.2-5.6	0.35-5.5	6.00-17.5
Fat (g)	0.15-9.7	3.9-33.8	0.87-5.1	0.5-10.9	6.2-23.8	0.4-8.0	11.4-18.3
Carbohydrates (g)	13.2-9.7	17.9-54.0	25.8-57.5	1.9-23.1	81-14.6	1.4-27.3	1.3-18.7
Calcium (g)	0.004-0.08	0.007-0.05	0.007-0.22	0.02-0.15	0.04-0.50	0.04-0.21	0.03-0.16
Iron (mg)	0.3-2.3	0.44-5.3	1.3-5.5	0.5-5.7	1.6-23.6	0.05-3.4	1.03-2.6
Vitamin A Value (I.U.)	6-239	15-821	43-193	23-1435	20-6934	19-211	29-2410
Thiamine (mg)	0.02-0.10	0.03-0.35	0.14-0.27	0.02-0.21	0.05-1.4	0.005-0.07	0.06-0.16
Nicotinic acid (mg)	0.04-1.3	0.3-3.5	0.36-0.87	0.1-1.7	0.51-1.4	0.05-0.14	0.26-5.5
Riboflavin (mg)	0.02-0.10	0.007-0.09	0.04-0.07	0.02-0.07	0.05-0.13	0.03-0.28	0.02-0.38
Vitamin c (mg)	0.9-3.6	0.9-1.5	--	0.8-37.9	225-182.2	0.15-4.1	0.32-5.4

In Tamil Nadu, the weather has a significant impact on what is considered seasonal food, as various harvests determine the dishes that are consumed at different times of the year. Mangoes are a feature in the summer; kinds like Alphonso and Neelum are used in recipes including Mango *Pachadi* and Mango Rice (*MambazhaSadam*). During the warmer months, the refreshing water of the tender coconut is a popular choice for staying hydrated. During the monsoon season, jackfruit is harvested and utilized in various dishes such as curries, chips and *sundals*. Tapioca, on the other hand, is normally eaten with fish curry or in a spicy *masala*. Leafy greens, including as spinach and fenugreek, are staples in the wintertime diet, popping up in dishes like *KeeraiKootu* and *KeeraiMasiyal*. Seasonal cuisines are also plays an important role in events like January's Pongal harvest festival. Pongal is made around this time in both savory and sweet varieties (*VenPongal* and *SakkaraiPongal*). Bananas, available throughout the year but particularly abundant in the monsoon and winter, are used in various snacks like banana chips and fritters. Gooseberries, harvested in winter and spring, are consumed in pickles and juices, prized for their health benefits. Tamil Nadu's rich culinary tradition is revealed through these seasonal delicacies, which also reflect the region's agricultural richness. The list of seasonal Tamil cuisines, including desserts, drinks and traditional foods, is as follows: These dishes are deeply rooted in Tamil culture and vary according to the seasons, showcasing the region's rich culinary diversity.

A classic sweet dish from Tamil Nadu, the UlundhuKazhi is prepared using copious quantities of gingelly oil and palm jaggery. All of the ingredients used to make kazhi have a high nutritional content. It is a very healthy meal from the Kongunadu cuisine that is perfect for an evening snack. Pazhayasaadham is rich in healthy nutrients and vitamins and one of the main components of this food is phytic acid and phosphorus which leads to many benefits. The anti-nutrient components in the rice are broken down by the lactic acid bacteria in the old rice meal, improving the availability and bioavailability of beneficial micronutrients and minerals like calcium, potassium, and iron by thousands of percentage points. For instance, the iron content of 100 grams of rice increased from 3.3 milligrams to 73.91 milligrams following a 12-hour fermentation. For this reason the old rice is considered as one of the best by health experts. Vitamin C in old rice helps improve immunity and skin health. Consuming Vitamin C, iron, calcium, potassium, sodium, zinc Old rice nutrition provides the energy needed for a full day of physical exertion and has a cooling effect. Food scientists who studied the eating habits of different parts of the world concluded that old rice is very good because it contains healthy vitamins and nutrients. It has rare vitamins B6 and B12, which are difficult to find in

other foods. In addition to having numerous anti-inflammatory and immune-stimulating properties, this rice generates trillions of helpful bacteria that aid in digestion. Digestion is aided by bacteria, which are rich in immune-stimulating and anti-inflammatory substances. Tamil Nadu-styled dosa makes for a perfect variant of this South Indian classic dish. From elevating the nutritional profile to enriching the meal with vitamin C and potassium, people can easily fulfill the lacking needs of the body by adding this dish to their food menu. This *murungaikeerai* (drumstick leaves) increase immunity level, helps blood purification, increase in blood etc. *Vella seedai* is a popular snack during festivals like Krishna Jayanthi. This is traditional south Indian food. Ingredients like rice flour, jaggery, cardamom. Because rice flour contains chlorine, which removes cholesterol and triglycerides from the liver, it improves liver function. The fact that rice flour is entirely gluten-free and safe for those with celiac disease is another important advantage of utilizing it. Brown rice is used to make rice flour, which is high in fiber and lowers cholesterol and supports intestinal health. Burfi is a traditional sweet. It is rich in iron and has many other health benefits. There are many types of burfi like peanut burfi, sesame burfi, coconut burfi etc. This burfi is high in protein which is important for preventing muscle loss. It has monounsaturated healthy fats. It is rich in vitamin E, B3, B6, biotin, copper, iron & zinc. Laddu is a popular sweet from the Indian subcontinent, considered a part of Indian cuisine. There are varieties of laddus. Some of them are: besan laddu, motichurladdu and coconut laddu. It is often prepared during festivals, special occasions, and celebrations and is enjoyed for its sweet, rich and delicious taste.

INGREDIENTS	BENEFITS
Turmeric	skin cancer, small pox, chicken pox, wound healing, urinary tract infections, and liver ailments. It has anti-inflammatory, choleric, antimicrobial, and carminative actions. It has anti-inflammatory, choleric, antimicrobial, and carminative actions
Cumin	It helps reduce swelling in the body, protects your cells, and may help your brain work better. It's also good for your heart, can help with digestion, and might even make you feel happier
Pepper	It enhances the digestive capacity and significantly reduces the gastrointestinal food transit time. Piperine has been demonstrated in in vitro studies to protect against oxidative damage by inhibiting or quenching free radicals and reactive oxygen.
Tamarind	It contains polyphenols like flavonoids, some of which can help regulate cholesterol levels. The antioxidants in this fruit can help reduce oxidative damage to LDL cholesterol, which is a key reason of heart disease. Tamarind is also relatively high in magnesium. Magnesium has many health benefits and plays a pivotal role in many body functions. It can also help lower blood pressure and has anti-inflammatory and anti-diabetic effects.
Garlic	Gives a boost to the immune system. It is rich in vitamins C and B6, manganese, and selenium, all of which contribute to improved immune function.
Asafoetida	asafoetida, commonly known as hing, is a pungent spice used in Indian cooking that offers several health benefits. It is known for its ability to aid digestion, helping to reduce bloating, gas, and stomach discomfort. Asafoetida also has anti-inflammatory properties, which can help reduce swelling and pain in the body
Toor dal	Toor dal is a good source of dietary fiber, which can help to prevent constipation and promote regularity, lower risk of heart disease, stroke, certain cancers, type 2 diabetes and cardiovascular disease.

Soups: Vitamins, minerals, antioxidants, and healthy fats can be found in leafy greens, legumes, turmeric, nuts, seeds, and mushrooms. In addition to improving flavor and texture, these components improve digestion, lower inflammation, and strengthen heart health. It is well known that a non-vegetarian soup is often high in protein and vitamin B. In addition to preserving your endurance and hemoglobin level, it may help you build stronger and faster muscles.

Black Coffee: Through thermogenesis, black coffee is a low-calorie beverage that increases metabolism and promotes fat burning. Black coffee's caffeine improves brain function by inhibiting adenosine, the neurotransmitter that causes weariness. This enhances focus, attentiveness, and memory. A sugar-free cup lowers the chance of energy collapses linked to sugary drinks by maintaining a consistent mental energy level.

By improving brain health and lowering inflammation, it reduces the risk of Parkinson's and Alzheimer's. Additionally, it promotes cardiovascular health, assisting in the prevention of stroke and heart disease. Bioactive substances found in black coffee offer heart and brain protection.

Ragi Drink: Prior to the 1950s, whole grains including barley, brown rice, amaranth, and ragi were mainstays of the traditional Tamil diet; however, rice eventually took over. It is a resilient crop that thrives in high altitudes and can tolerate severe weather, making it ideal for the climate of India. Dried grains are either crushed or spouted, dried, and then ground to make ragi flour. It is a great source of healthy carbs and is typically eaten in its unadulterated state because it is too small to be treated or polished. According to Dr. Ritika Samaddar, a dietician at Max Hospital in New Delhi, "Ragi can be placed at the pinnacle of food grains because of its high nutritional value."

Payasam (Kheer): Payasam, also known as kheer, is a popular dish made all throughout India, but especially in Tamil Nadu, especially on happy occasions like birthdays, marriages, and naming ceremonies. Kheer was made solely with rice in previous ages, but it is currently made with a variety of basic ingredients. Kheer is a highly recommended diet for emaciating illnesses and leanness since it is healthy and nutritious. Being a coolant, it is very helpful for paittic conditions. However, it should be avoided by people with extremely weak digestive systems. Additionally, people with health conditions like type II diabetes, urinary problems, etc. should avoid it or be recommended to use very little of it. Additionally, people with severe colds, coughs, asthma, dyspnea, and phlegm shouldn't prefer it on a regular basis. All things considered, Payasam is appropriate for people who want to gain weight and have a healthy digestive system.

INGREDIENTS BENEFITS

LEMON JUICE: Packed with vitamin C, lemons aid with weight loss, heart health, and iron absorption. Water keeps a normal temperature. Make a cushion and lubricate. Protect your fragile structures, including your spinal cord. Waste can be expelled by bowel movements, perspiration, and urine.

BUTTERMILK curd strengthens bones and teeth, aids in weight loss, encourages good hair, and regulates blood sugar. Ginger relieves nausea and reduces inflammation, Weight loss and chemotherapy companion Coriander or cilantro leaves are rich in minerals such as potassium, calcium, manganese, iron, and magnesium. rich in many essential vitamins, including folic acid, beta-carotene, vitamin A, and vitamin C, all of which are essential for good health. It supports liver activity that is healthy. Green chili: The high vitamin A content of green chillies may improve vision. Green chillies include the powerful antioxidant vitamin C, which aids in the production of the vital collagen that maintains healthy, taut skin. Salt is essential for neuron and muscle function, fluid equilibrium, and other physiological functions.

RAGI DRINK Among the numerous vital nutrients found in ragi are L-ascorbic acid, vitamin E, B-complex vitamins, iron, calcium, proteins, cell reinforcements, sufficient calories, and healthy

unsaturated fats. After a good night's sleep, the stomach and digestive tracts exhibit optimal levels of digestion in the morning. Thick bones, gluten-free, braces, etc. Keep the water at a consistent temperature. Lubricate and coat. bones. Protect your spinal cord and other delicate structures. To get rid of waste, urinate, sweat, and have bowel movements.

The advantages of **PAYASAM Milk** Milk bone density and health. calcium, protein, and muscle mass. Dry fruits lower the risk of several diseases and improve blood flow. Increase your vitality. Boost hair strength and stop hair loss. Minerals and vitamins Grains aid with digestion and intestinal health.

Constipation and heart disease risk may be reduced, as well as blood cholesterol levels. Magnesium helps form bones and produce muscle energy, iron helps the blood carry oxygen, and selenium protects cells from oxidation and is essential for a robust immune system. Jaggery aids with digestion, increases metabolism, cleanses the body, and keeps anemia at bay.

SCIENTIFIC CONCEPTS ON INDIAN SPICES / MILLETS: Indian spices are special ingredients used in cooking to add flavor, color, and aroma to food. Some common Indian spices include cumin, turmeric, cardamom, and chili. These spices make Indian as well as Tamilian food taste unique and delicious. They are often used in small amounts, but they bring out strong flavors. Many spices from Tamil Nadu also have health benefits, such as helping digestion or boosting immunity. Using these spices, Tamil food can be spicy, sweet, or even a little sour, depending on the mix.

Turmeric: Turmeric has been used as a food, medicine, and cosmetic. Rheumatoid arthritis, conjunctivitis, skin cancer, smallpox, chickenpox, wound healing, urinary tract infections, and liver conditions are all treated with turmeric as a herbal remedy. It contains antibacterial, carminative, choleric, and anti-inflammatory properties. It contains antibacterial, carminative, choleric, and anti-inflammatory properties. The scientific name for turmeric is *Curcuma longa*. The molecular formula of curcumin is $C_{21}H_{20}O_6$

Cinnamon: Because of its scent, which may be added to a variety of meals, perfumes, and medicinal items, cinnamon is mostly utilized in the aroma and essence sectors. Insecticidal, antimycotic, anti-inflammatory, mosquito larvicidal, and anticancer properties have all been attributed to it. Additionally, toothaches, dental issues, oral microflora, and poor breath have all historically been treated with cinnamon powder. Cinnamaldehyde is the scientific word for cinnamon. This is its molecular formula C_9H_8O

Pepper: In addition to being utilized in human diets, black pepper is also used medicinally, as a preservative, and in perfumes. In recent decades, numerous physiological effects of black pepper, its extracts, or its primary active ingredient, piperine, have been documented. Dietary piperine improves digestion and dramatically shortens the gastrointestinal meal transit time by positively activating the pancreatic digestive enzymes. *Piper Nigrum* is the scientific name for black pepper. The molecular formula for it is $C_{17}H_{19}NO_3$

Cardamom: Lowers blood pressure, anxiety, and weight; contains substances that fight cancer; has antibacterial and anti-inflammatory properties; relieves cavities, bad breath, and digestive issues; enhances breathing; and protects the liver. Scientific name for cardamom: *Iselettaria Cardamomum*. Its formula for molecules is $C_{16}H_{14}O_4$

Cloves: It has a high antioxidant content, prevents cancer, eliminates bacteria, enhances liver health, regulates blood sugar and bone health, and lessens stomach ulcers. Clove scientific name is *Eugenia Aromatic Kuntze*. And its Molecular formula is $C_{10}H_{12}O_2$

Millets: Millets are small, nutritious grains that have been grown for thousands of years. It has good source of fiber, vitamins, and minerals, making them healthy for our bodies. Millets come in different types, such as pearl millet, finger millet, and sorghum. It can be used to make porridge, bread and even salads. Millets are a fantastic option for those who are allergic to gluten because they are also gluten-free.

NUTRITIVE VALUES OF PEARL AND FINGER MILLETS

	PEARL MILLET (Grams, Milli grams, Kilo, Calorie)	FINGER MILLET (Grams, Milli grams, Kilo, Calorie)
Carbohydrate	61.8(g)	66.8(g)
Protein	10.9 (g)	07.2
Fat	5.43 (g)	1.92 (g)
Energy	347(Kcal)	320(Kcal)
Dietary fiber	11.5(g)	11.2(g)
Calcium	27.4(mg)	364.0(mg)
Protein	289(mg)	210(mg)
Magnesium	124(mg)	146(mg)
Zinc	2.7(mg)	2.5(mg)
Fe	6.4(mg)	4.6(mg)
Thiamin	0.25(mg)	0.37(mg)
Riboflavin	0.20(mg)	0.17(mg)
Niacin	0.9(mg)	1.3(mg)
Folic acid	36.1(μ g)	34.7(μ g)

CULTURAL AND HEALTH IMPACTS OF TAMIL CUISINE IN PRESENT SCENARIO

In traditional Indian life, especially in Tamil culture, food was deeply connected to nature, health and seasonal rhythms. People consumed fresh, natural and locally grown produce based on seasonal availability. Common vegetables included brinjal, pumpkin, jackfruit, peas and spinach, all prepared simply with minimal spices to retain their natural goodness. Grains such as wheat, barley, rice, maize, jowar as well as bajra were dietary staples, used in both flour and grain forms, in dishes like a nutritious khichdi made from barley, curd and flour. Dairy products like milk, curd, buttermilk, butter, ghee and paneer were made fresh at home. Cooking was traditionally done in earthen pots over a slow flame, preserving nutrients and enhancing flavor. Tamil culture also holds special reverence for fruits, especially the concept of *Mukkani* (the trinity of fruits - *Maa*(mango), *Pala* (jackfruit) and *Vazhai* (banana)), each considered sacred, nutritionally rich and culturally significant. These fruits were not only staple dietary elements but also featured prominently in religious rituals as well as festivals.

However, with modern life becoming increasingly fast-paced and heavily influenced by Western food habits and globalization, traditional food practices particularly those rooted in Tamil culture are rapidly fading. The convenience of packaged foods, combined with sedentary lifestyles and a growing

tendency to order meals daily, has led to a major shift away from home cooked, nutritious meals. This transformation has weakened the foundation of Tamil's rich culinary heritage, where foods like *rasam*, *poriyal*, *kali* and the culturally significant *Mukkani* fruits, once played a central role in health and well-being. As people move further away from traditional diets, there's a noticeable rise in chronic health issues like obesity, diabetes, blood pressure and heart disease, turning populations into patients over time. The issue of food is not only cultural and individual but also a global concern, tied directly to poverty and inequality. By 2030, the United Nations hopes to eradicate hunger, ensure food security, and enhance nutrition under Sustainable Development Goal 2. A key strategy to meet this goal is increasing food production sustainably through enhancing soil fertility, leveraging biological resources, and using genetic advancements.



To meet rising food demands without damaging the environment, we must shift toward sustainable intensive farming. This means using smarter methods like closing yield gaps, which help farmers grow more based on local conditions, and integrated farming systems that protect soil and boost productivity through techniques like intercropping. While modern agriculture has increased food output, it often overuses water, energy, and land. Preserving traditional knowledge like Tamil Nadu's time-tested farming and food practices alongside eco-friendly innovations is a tool to long-term sustainability. By combining the knowledge of the past with today's resources, we can create a food system that supports both people and the planet. Global efforts like the NOURISHING Framework encourage this balanced approach, promoting a food culture rooted in health, tradition, and community.

Several schemes have been implemented by the department of Fisheries, Dairy development, Agriculture, Agricultural engineering, Agricultural marketing and agriculture business, AdiDravidar

and Tribal Welfare and Horticulture and plantation crops at State level as well as Central level as follows :

Blue Revolution (includes schemes related to inland and marine fisheries) (Agriculture & Co-operation), Motorization of Traditional Crafts, White Revolution (the umbrella scheme includes National Livestock Mission (NLM), National Programme for Bovine Breeding and Dairy Development, and Livestock Health and Disease Control Programme (Agriculture & Co-operation), Dairy Development schemes, Green Revolution Umbrella Scheme – Mission for Integrated Development of Horticulture, Integrated Scheme on Agriculture Census & Statistics, Integrated Scheme on Agriculture Co-operation, Integrated Scheme on Agricultural Marketing, National Food Security, Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Pradhan Mantri Fasal Bima Yojana (PMFBY)(Agriculture & Co-operation),Crop Insurance, Collective Farming, All Centrally Sponsored Schemes, Green Revolution Umbrella Scheme – Mission for Integrated Development of Horticulture, Integrated Scheme on Agriculture Census & Statistics, Integrated Scheme on Agriculture Co-operation, Integrated Scheme on Agricultural Marketing, National Food Security, Sub-mission on agriculture mechanization, Pradhan Mantri Krish Sinchayee Yojana (accelerated irrigation benefits programme & command area development programme, Nutrient- Based Subsidy, Urea Subsidy, Biotechnology Research & Development, Crop Science (Agriculture & Co-operation), Animal Science (Agriculture & Co-operation),Fishery Science (Agriculture & Co-operation), Pradhan Mantri Krish Sinchaye Yojana (Agriculture & Co-operation),Micro Irrigation, Green Revolution umbrella scheme, including: Rashtriya Krishi Vikas Yojana (RKVY): AND Krishi Unnati Schemes {Mission for Integrated Development of Horticulture (MIDH), Integrated Scheme on Agriculture Census & Statistics, Integrated Scheme on Agriculture, Collective Farming,

Pradhan Mantri Krish Sinchaye Yojana (PMKSY) (Agriculture & Co-operation),Installation of drip and sprinkler system, Umbrella Programme for development of SC, OBC & other vulnerable groups. (Social Justice & Empowerment), System of Rice Intensification (SRI),Kuruvai and Samba special packages Schemes, Collective Farming, Natural Resource Management (Agriculture & Co-operation),Sub-Mission on Seed and Planting Material (under NMAET) under the umbrella programme on Green Revolution (Agriculture & Co-operation),Crop Science (Agriculture & Co-operation),Fishery Science (Agriculture & Co-operation), Horticulture (Agriculture & Co-operation),Vanbandhu Kalyan Yojana Tribal Affairs, White Revolution (Agriculture & Co-operation), Dairy Development Schemes, Agricultural Education (Department of Agri. Research & Education),Tamil Nadu Agricultural University schemes, Agricultural Extension (Department of Agri. Research& Education.),Tamil Nadu Agricultural University schemes, Pradhan Mantri Krishi Sinchayee Yojana (Agriculture & Co-operation),System of Rice Intensification (SRI),Mission on

Sustainable Dry land Agriculture, Micro Irrigation, White Revolution (Agriculture & Co-operation), Development of Water Resources Information System (Dept. Of Agri. Research & Education), Agricultural Extension (Department of Agri. Research & Edu.), Integrated Farming System,

Green Revolution (Agriculture Marketing and allied Interventions), Market Intervention Scheme and Price Support Scheme (MIS-PSS), Price Support Schemes, Pradhan Mantri Kisan Sampada Yojana.

CONCLUSION

The above mentioned welfare schemes implemented at both central and state levels reflect a comprehensive approach to achieving SDG Goal 2: Zero Hunger, which emphasizes sustainable livelihoods, better nutrition, and food security. These programs, targeting sectors like fisheries, dairy and livestock, are essential in addressing hunger and malnutrition while empowering rural communities. However, beyond these policy measures, an interdisciplinary approach linking agriculture, nutrition, medicine and cultural heritage offers deeper solutions. Traditional food systems, particularly Tamil cuisine, provide powerful examples of how culturally rooted diets can support health and sustainability. Backed by Tamil literature and ecological knowledge, ancient cooking methods and food habits demonstrate how local ingredients and regional diversity contributed to natural, balanced and therapeutic meals. Tamil cuisine is not only one of the most flavorful in the world but also among the healthiest. Dishes like *idli*, *dosa*, *sambar*, *vada*, *idiyappam*, etc., reflect a perfect blend of taste, tradition and nutrition. These foods use naturally available ingredients and spices with known health benefits, supporting digestion, immunity and disease prevention. Hence, the present research paper analyses the medical benefits of traditional Tamil cuisine compared to modern day processed foods, revealing its relevance in preventing chronic illnesses like diabetes, heart disease and obesity. In today's fast paced lifestyle dominated by convenience foods, it is crucial to create awareness among the younger generation about the benefits of ethnic and traditional foods. Promoting such food practices not only preserves cultural identity but also aligns with global efforts to ensure a future free from hunger and health.

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