"DOCUMENTATION AND NUTRITIVE EVALUATION OF TRADITIONAL FOODS OF KERALA –KASARGOD DISTRICT"

ST. TERESA'S COLLEGE
(AUTONOMOUS)
ESTD 1925

PROJECT SUBMITTED

In the Partial Fulfilment of the Requirement for the Award of the Degree of

B.Sc. NUTRITION AND DIETETICS

BY

FIDA B

SB21ND021

DEPARTMENT OF CLINICAL NUTRITION AND DIETETICS

ST. TERESA'S COLLEGE (AUTONOMOUS) ERNAKULAM

APRIL 2024

CERTIFIED AS BONAFIDE RESERCH WORK

29/04/24

Signature of Internal Examiner

ST. TERESA'S COLLEGE (AUTONOMOUS) DEPT. OF CLINICAL NUTRITION AND DIETETICS ERNAKULAM

29/4/24

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DECLARATION

I hereby declare that the project "**DOCUMENTATION AND NUTRITIVE EVALUATION OF TRADITIONAL FOOD OF KASARGOD DISTRICT**", submitted in partial fulfilment of the requirement for the award of the degree of B.Sc. Nutrition and Dietetics is a record of original research work done by me under the supervision and guidance of Dr. Soumya P.S, Assistant Professor, Department of Clinical Nutrition and Dietetics, St. Teresa's College (Autonomous), Ernakulam and has not been submitted in part or full of any other degree/diploma/fellowship or the similar titles to any candidate of any other university.

Place : Ernakulam FIDA B

Date : 29/04/2024

CERTIFICATE

I hereby certify that the project entitled **"DOCUMENTATION AND NUTRITIVE EVALUATION OF TRADITIONAL FOODS OF KERALA – KASARGOD DISTRICT",** submitted in partial fulfilment of the requirement for the award of the degree of B.Sc. Nutrition and Dietetics is a record of original work done by Fida B during the period of the study under my guidance and supervision.

Signature of the HOD

Ms. Surya M. Kottaram
Head of the Department
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1. INTRODUCTION

Recognizing and promoting the nutritional value of traditional meals is necessary. Customary culinary items have significant social, cultural, and economic value. Customary foods are crucial for maintaining food security and have great potential for significantly reducing malnutrition (Krishnakumar, 2019). Contemporary dietary habits bear the stamp of traditional foods, which are a reflection of cultural inheritance. As a result, they are crucial for understanding the dietary habits of various nations and are necessary for precisely estimating the food intakes of the general public (Antonia, 2007).

Traditional food describes a product made with certain ingredients, a recipe that has been around for a while, or a particular method (Nathalie, 2007) Indigenous people's livelihoods can benefit greatly from the use of traditional knowledge. Generally speaking, traditional knowledge can assist indigenous people in enhancing their standard of living, particularly for those who depend on natural resources for subsistence. It can provide safe and enriched food, for example, as well as a means of income, which is essential for ensuring food security in difficult times. Additionally, a community's ability to endure and be conserved for future generations can be greatly impacted by traditional knowledge of edible and medicinal wild plants. (Jamilah, 2023)

Indian traditional meals place a strong emphasis on meeting the body's energy needs while also working to promote general health and ward off illness among the Indian populace. Indian traditional diets are primarily vegetarian and consist primarily of whole grains, legumes, nuts, fruits, vegetables, dairy products, spices, and herbs. Fermented foods are also included in the diet and can be regarded as "functional" due to their high content of various phytochemicals that have potential as nutraceuticals. The traditional foods add various bioactive substances to the diet in addition to their inherent nutritional value (Jyoti, 2021)

In addition to the loss of traditionally prepared and culturally acceptable food, the substitution of non-traditional foods resulted in the loss of traditional food production knowledge. Community members experienced major health and socioeconomic problems as a result (Diaz, 2005). Therefore, it is imperative to prevent the loss of traditional cuisines that are a reflection of the rich cultural history of the region, as well as to maintain the skills that have been acquired over generations.

Indigenous People's health and well-being are greatly influenced by their traditional food system. Nonetheless, a wealth of evidence indicates that Indigenous Peoples' traditional knowledge and food source are eroding. Due to household food insecurity, this has led to a decrease in the variety of diets, the usage of fewer species, and poor health outcomes. This situation can be altered by understanding the traditional food system. Raising awareness about the traditional food system can help to develop a robust, wholesome society. For a certain geographic situation, traditional culinary knowledge is thought to be the best. The population's overall health may suffer from altered eating habits. Therefore, it is essential to understand the significance of healthy eating customs from our own heritage. (Shiripad, 2012)

According to Everett (2008), International migration, the technological revolution, and culinary tourism are some of the factors that have fueled the globalization of eating patterns and cleared the way for global cuisine. Hollingsworth (2000), asserts that because of their distinctive ingredients and manufacturing processes, traditional foods are currently regarded as competitive products. The creation of new policies and methods for quality standardization is necessary to raise the standards of these regional foods from local to global levels.

2. REVIEW OF LITERATURE

Under the following headings, relevant literature for the current study "Documentation quality evaluation of traditional foods of central zone of Kerala" is evaluated.

2.1. Importance of traditional knowledge

2.2. History of traditional foods

2.2.1. Traditional foods of India

2.2.2. Traditional foods of Kerala

2.2.3. Meaning, concept and definition

2.2.4. History and Ethical background

2.3. Traditional foods of adequacy of different groups

2.4. Health and nutritional aspects of traditional foods

2.5. Key challenges to traditional foods

2.6 Future scope of traditional foods

2.1. Importance of traditional knowledge

Jose *et al*. (2021) claim that India is one of the world's most biodiverse nations. However, not much has been done thus far to safeguard the rich and extensive traditional knowledge that is held by indigenous communities across the nation. One of the world's twelve mega biological countries is India. India has a high level of agricultural biodiversity and is one of the twelve main centers of origin for cultivated plants. Indigenous and traditional knowledge, both formal and informal, are equally abundant in India.

Clodoaldo *et al.* (2024) noted that the value of collaboration between scientists and Beroean peoples for the preservation of traditional knowledge collaboration between scientists and indigenous peoples is critical for the preservation of traditional knowledge, which is necessary for the preservation of natural resources and the advancement of greater diversity in scientific research, according to the findings of this study.

Joshua *et al.* (2022), the yuman people maintain their knowledge, customs, and beliefs around lichens and mushrooms. Even though their use is dwindling, they are still a component

of their traditional medicine and cuisine; some are even employed as trail markers and for amusement and decoration. The traditional knowledge about these species is an integral component of the cultural identity that the yuman peoples work hard to maintain, even beyond their practical significance.

The vital significance that lesser-known native plant species play in the food, nutrition, and livelihood security of India's traditional communities . A total of 90 traditional women and 60 important informed community members or 150 participants were chosen from East Siang and Upper Siang, taking into account that women are the primary keepers of food knowledge and customs. (Ranjay, 2021)

According to Ramesh (2016), the shift in the eating habits of the urban population, especially the youth, is one of the obvious effects of globalization in Kerala, Fast food has clearly replaced traditional foods in the urban dietary pattern, as can be shown. The consumption of packaged fruit juices and processed foods has increased in tandem with that.

2.2. History of traditional foods

2.2.1. Traditional foods of India

Recognizing and promoting the nutritional value of traditional meals is necessary. Customary culinary items have significant social, cultural, and economic value. Customary foods are crucial for maintaining food security and have great potential for significantly reducing malnutrition. It is imperative that the information on their manufacture is preserved. In cooperation with small-scale producers, the abundance of knowledge about traditional products needs to be further increased.

Krishnakumar *et al*. (2019) reported that, Indian cuisine is centered on the preparation of dals, or dried legumes and pulses. When combined with cereals, they offer a cheap source of vital protein. When appropriate, meat and vegetables are served alongside daals, which are cooked whole and pureed.

According to Kakate (1997), the adoption of vegetarianism in nations such as India can be attributed mostly to socio-economic and cultural issues, rather than the claimed health benefits of the diet.

Jyothi *et al.* (2020) reported that the functional properties of functional microorganisms enhance various health-promoting benefits for consumers, including bio-preservation of

perishable foods, bio-enrichment of nutritional value, protective properties, bioavailability of minerals, production of antioxidants, antimicrobial activities, non-production of biogenic amines, and probiotic properties. These properties play an important role in traditional fermentation processes.

Ayurveda prescribes traditional foods together with dietary instructions. Many of the traditional health foods found in India can be classified as ayurvedic foods due to the striking similarities between ayurveda dietetics and traditional cuisines. (Preetam,2015)

Even though a large amount of Indian cuisine is vegetarian, many of the traditional recipes also contain fish, poultry, goat, lamb, and other meats. Many cultural groups that have invaded India over the years, like the Persians, Mughals, and European colonists, have also left their mark on Indian cuisine (Charisma, 2013).

Nongdam *et al*. (2014) described that, Bamboo shoots are regarded as one of the beneficial foods for health because of their high protein, carbohydrate, vitamin, and mineral content as well as their extremely low-fat content. Despite the many health advantages of bamboo shoots, only a few countries in Southeast and East Asia consume them.

2.2.2. Traditional foods of Kerala

Kerala in India is a unique state, particularly when one tries to comprehend the common misconception about South Indian cuisine. The state's location, climate, history, population, culture, and foreign influence, among other factors, are all correlated with the cuisine and food system. Both vegetarian and non-vegetarian foods are available in Keralan cuisine. Grated coconut and coconut milk are frequently used for thickening and flavouring because coconut is a crop that grows abundantly in Kerala. Tapioca and rice are produced in profusion. It is the primary starch component of Keralan cuisine. (Sajitha, 2018).

According to Sajitha (2018), Keralan food is divided into two categories. Malabar food is found in the northern region of Kerala, while Syrian Christian cuisine is found in the regions of Travancore and Cochin. These two are obviously distinct from one another. The cuisines of Travancore and Malabar are completely distinct. They each cook in a different way. Kerala's primary hub for Malabari food is thought to be Thalassery and Kozhikode. The culinary specialties and wide range of flavors captivate people from all walks of life. Malabar cuisine is a treasure trove of both vegetarian and non-vegetarian meal types. Other people can get halal

meals from the Malabar dishes. It is among Kerala's specialties from the Malabar region of cooking.

Traditional knowledge has been and continues to be crucial in fields including medical care, agricultural development, and food security. International recognition of the value of traditional and indigenous knowledge for both its producers and the global community at large, as well as the necessity of fostering, preserving, and protecting such information, is expanding (Aneena, 2009)

2.2.3. Meaning, concept and definition

Antonia *et al*. (2007) defined traditional food as they have influenced modern eating habits and are a reflection of cultural inheritance. They are essential components of the dietary patterns observed in various nations, and as such, they are crucial for precise estimation of the dietary intakes of the population.

Kuhnlein *et al*. (1996), a traditional cuisine is one that is available from local resources, acceptable culturally, and has sociocultural connotations. It also includes preparation and processing methods, usage, composition, and nutritional effects for the people who consume it.

Bertozzi *et al.* (1998) defined traditional food item as it is a representation of a group, it belongs to a defined space, and it is part of a culture that implies the cooperation of the individuals operating in that territory.

A product needs to have a connection to a place and be a part of a tradition in order to qualify as traditional, since this will inevitably guarantee its survival throughout time. (Jordana, 2000)

Traditional refers to a practice that has been demonstrated through generations of use in the local market; this length of time should be at least 25 years and is typically attributed to one human generation. (EU, 2006)

2.2.4. History and Ethical background

Individuals all around the world have created unique food systems based on a variety of variables, such as the climate in which they live and the availability of biological resources. India has maintained distinct ecosystems for the emergence of numerous cultural groups due

to its high biodiversity, diverse eco-climatic zones, geographical diversity, and geological variability.

India is regarded as one of the countries with the greatest cultural diversity in the world since it is home to thousands of different castes, cultures, and ethnic groups (Cheema, 2011). Regarding their environment, appearance, conventions, taboos, and eating customs, these cultural groupings have highly distinctive identities. (Kala, 2005)

Sarkar *et al.* (2015) reported that traditional Indian cuisines are recognized as healthy foods because they contain a variety of beneficial ingredients, including antioxidants, compounds that cure the body, and dietary fibre.

In the past, the majority of Indians have relied on sattvika meals, which are plant-based foods such cereals, millets, fruits, vegetables, and sweets (Kwon, 2015).

Azizi *et al.* (1998) claim that traditional cuisines have changed throughout millennia, taking into account socioeconomic factors, local material availability, and prevailing climatic circumstances. According to Parpia (1999), traditional Indian dishes evolved throughout millennia as a part of at least forty indigenous tribes.

2.3. Traditional foods of adequacy of different groups.

Somnath *et al.* (2023) state that traditional cuisine recipes have been refined, used, and passed down from generation to generation. Plant- and dairy-based foods make up the conventional Indian "vegetarian" diet, whereas meat, eggs, and fish make up the "non-vegetarian" diet. Although the northern section of India primarily relies on wheat products, the eastern, north-eastern, and southern regions of the country primarily rely on rice-based products.

Aglindeswari *et al.* (2017) The ideal combination of proteins from rice and legumes, carbohydrates from rice, fats from curry and fried savory foods (both visible and invisible), vitamins and minerals from sprouted grams, and vegetables that contain functional components like β-carotene, vitamins C and E, thiamine, tocopherol, and antioxidant compounds can be found in traditional South Indian foods. A classic South Indian dish, rasam is made with a foundation of tamarind juice and other spices. Rasam is a functional food, with every ingredient being touted as having a medical benefit for a different kind of disease.

Another fermented food similar to idli that is primarily found in south India is dosa. It's a heavily spiced pancake with blackgram and rice as main ingredients. Decalepishamiltonii roots are used to make the traditional herbal beverage known as nannari sharbat. Ananthamula is the name of the plant in Ayurveda. Beverages are consumed in the summer to quench thirst and have hepatoprotective properties that are beneficial to stomach health. (Preetam,2015)

Dasappa *et al*. (2021) reported that the round, unleavened, multi-layered flat bread known as parotta is made in South India using wheat flour. It's a common cuisine item in the southern Indian states. The components for parotta are wheat flour, salt, water, and oil for spreading the dough; optional additives like sugar and egg are also used.

2.4. Health and nutritional aspects of traditional foods

Indian cuisine is considered a functional food due to its diversity. Although regional variations exist in traditional Indian meal patterns, all typically feature a diverse array of dishes, encompassing items from every dietary group. Traditional is have perfect food pairings that balance each other out in terms of nutrients and non-nutritive bioactive chemicals. (Kalpana,2020)

Sampat *et al*. (2023) reported that traditional meals often serve as a source of essential nutrients in addition to being a representation of culture. Vitamins, minerals, antioxidants, and dietary fiber are abundant in these foods, which promote general health and wellness. In addition, there is evidence linking traditional foods to a lower risk of developing chronic illnesses like obesity, diabetes, and heart disease.

Uauy *et al.* (2001), a traditional diet can prevent obesity and chronic diseases. Li *et al.* (2004), traditional fermented soybean dishes like sufu and douchi contain useful ingredients.

Trichopoulou *et al*. (2007), revealed apparent health benefits of traditional Greek meals . Greece's traditional Mediterranean cuisine has been linked to lower rates of cancer and coronary heart disease deaths in addition to lower overall mortality**.**

2.5. Key challenges to traditional foods.

Traditional foods are limited by the state of the market today, but if certain obstacles are overcome, they stand a strong chance of expanding in the future. These challenges include quality assurance (which, like with all branded products, must be a priority objective), legal protection of collective brands (insufficiently guaranteed in the various markets of the European Union), communication (a traditional product is exotic in the other markets and thus has to be advertised), and innovation. The majority of these obstacles can only be overcome by the small businesses who make this kind of goods organizing themselves effectively and cooperatively (Jorge, 2000).

According to Bedekar (2006), the bulk of traditional Indian processed foods are produced in the unorganized sector with minimal amounts of mechanization and in the least hygienic conditions. The primary obstacle facing the traditional food sector was the design of machinery due to insufficient data regarding the engineering features of traditional foods (Ramesh, 2006). According to Chaudhry (2006), one of the main issues facing the traditional food business is stability.

Yingyu *et al.* (2023) reported that the challenges of green manufacturing, equipment automation, production safety and quality control, and quality control should be addressed by the conventional fermented food business.

Kumar *et al*. (1998), factors such as changing socioeconomic position, greater purchasing power, and altered lifestyles were thought to have led to the rise in the consumption of processed and convenience goods.

According to Ranjini (2000), the primary cause of the drastic shift in the contemporary consumption pattern of convenient and fast foods is the accessibility of processed foods.

It was discovered that indigenous and traditional foods and food systems were disappearing, posing a serious threat to regional and global security as well as personal health (Kuhnlein, 2003).

According to Diaz (2005), the substitution of traditional meals resulted in the loss of traditional knowledge about food production as well as the development of less traditional and culturally suitable cuisine.

2.6. Future scope of traditional foods.

Traditional foods will face competition in the market going forward. Initially, it is important to preserve the traditional food market in order to safeguard the variety of food sources. Second, foods with useful qualities should be taken into consideration while creating customized meals for each individual. Health and traditional food products could be better understood with the help of information on health benefits. Third, in order to guarantee the production of high-quality food and to seize new market opportunities, the traditional food industry must quickly adopt new technologies. Fourth, preserving the fundamental qualities of foods that are significant to culture without compromising their safety should be the goal. Convenience food demand is rising, thus it makes sense to turn traditional dishes into products (Kim, 2015)

Monalisa *et al.* (2021),the food industry is evolving from traditional agriculture and food production into a new form of development driven by nanotechnology. Major recent advances in nanoscience and technology include those in nanofood, nanosensors, nano packaging, nanofertilizers, and nanopesticides. Nanoscience-based technology, such as nanofood drug delivery, nanonutraceuticals, and functional food, has a profound effect on food quality, food safety, and food packaging elements. The use of nanotechnology improves nutrition, helps preserve food, and ensures that micronutrients and bioactive ingredients are delivered safely.

Ting *et al*. (2021) described that, enhancing food safety can also be achieved in large part by minimizing food loss and recycling waste, maximizing the value of by-product's, enhancing nutritious content, and lengthening storage periods. This is where fermentation enters the picture as an affordable, adaptable, and tried-and-true method that improves the nutritional value and shelf life of food products.

Conventional breeding methods are inadequate in the current situation. In order to manage agricultural difficulties and achieve sustainable crop production, innovation in plant breeding is essential. Precision in plant breeding may now be achieved more quickly, cheaply, and with greater relevance thanks to novel plant breeding techniques, which involve a number of advancements ranging from genome editing methods to speed breeding and the integration of omics technology. New genome editing tools have made it possible to modify genes that are important for agriculture. (Fiaz, 2021).

Raquel *et al.* (2021) reported that the food business strives to create new goods that are both consumer-friendly and adhere to traditional methods and trends, all the while preserving the unique qualities that make certain items stand out as traditional.

The qualities of materials and structures utilized in a variety of industries, including food, medicine, and agriculture, can be improved with the use of nanotechnology. Nanotechnology has been used in the food industry for a variety of purposes, such as material encapsulation and distribution to targeted areas, flavour enhancement, the addition of antibacterial nanoparticles to food, improved long-term storage, pollution detection, improved storage facilities, and consumer awareness (Rajesh,2023)

Travelers are rapidly gravitating toward specialized travel experiences, such as luxury, ethnic, indigenous, heritage, adventure, and many more new travel-related offerings. They eagerly anticipate experiencing and becoming a part of the customs and history of the places they wish to visit (Divecha, 2012).

3. MATERIALS AND METHODS

This chapter explores the methodologies and resources employed throughout the various stages of the study, with further elaboration provided in the subsequent sections:

3.1. Locality of the study.

3.2 Selection of sample

3.3. Plan of study.

3.3.1 Collection of information regarding traditional food habits in Kasargod

3.3.2 . Documentation of traditional foods in Kasargod .

3.3.3. Preparation of selected traditional food in Kasargod .

3.3.4 To develop nutritive value of selected traditional foods in Kasargod .

3.1 Locality of the study

The Kasaragod district, situated in Kerala, India, is renowned for its diverse culinary traditions and rich cultural heritage. Its cultural identity is a blend of Malabar and Tulu influences, influenced by its adjacency to Karnataka. While traditional Kerala cuisine, featuring staples like rice, coconut, and spices, is predominant, there are also traces of Tulu Nadu cuisine, exemplified by dishes such as kori roti (chicken with crispy rice wafers). Given its coastal location, seafood, particularly fish, holds a significant place in the local diet, with popular dishes including prawn delicacies like chemeen kalthappam. Additionally, Kasaragod is famed for its distinctive assortment of snacks and sweets.

Table 1 : Localities of the study

Sl.no	Localities selected
1.	Pallam
2.	Uppala
3.	Badiadka
4.	Kumbala
5.	Naimaranmoola

3.2 Selection of sample

Population above 40 years with knowledge in preparing traditional food, those were selected from the study locality .

3.3 Plan of study

The study's design was formulated to meet with its objectives, encompassing the following categories:

3.3.1 Collection of information regarding traditional food habits in Kasargod.

3.3.2. Documentation of traditional foods in Kasargod.

3.3.3. Preparation of selected traditional foods in Kasargod.

3.3.4. To develop nutritive value of selected traditional foods in Kasargod district.

3.3.1 Collection of information regarding traditional food habits in Kasargod

From the identified study locations, information regarding the traditional food and food habits of each community associated with the preference of traditional foods based on how often they prepare traditional healthy food, reasons for the preference of traditional food, frequency of preparation of traditional food item, were collected through questionnaires.

Additionally other traditional kitchen appliances and utensils had been shown to us , including *kooja , Bharani , ottupathram, mankudam, attukallu , para ,naazhi , cheriya aattukallu, arakallu,, chirava, mann chatti, cheena chatti, muram , sevanazhi, uruli , kudam*

3.3.2 Documentation of traditional food in Kasargod

Table 2 : Different traditional foods

Sl.no	Different traditional foods
1.	Golibajji
2.	Kasargod rasayanam
3.	Ottupola
4.	Kadambu
5.	Kaambu varavu
6.	Kadala Kachiyathu
7.	Charumuru

8.	Chicken Varavu
9.	Kasargod Pulivaalam
10.	Neypathal
11.	Poriyappam
12.	Chattipathal
13.	Sorotta
14.	Beediappam
15.	Madakkada
16.	Batt pathal
17.	Chemeen kalthappam
18.	Adukka orotti
19.	Kori rotti
20.	Ney ada

The information of several traditional dishes from various communities was obtained via the questionnaire and interviews; this list of traditional foods is shown in the table. Additionally, we obtained complete details about the preparation techniques of a few traditional dishes. The procedure was documented using both textual and photographic means. Some traditional foods and the modifications made to traditional food preparations were also gathered through in-person interviews with knowledgeable persons utilizing a time/trend line.

Out of the above foods the following foods were selected for further study:

3.3.3 Preparation of selected traditional foods in Kasargod

Table 3: Selected traditional food

Sl.no	Selected traditional foods
1.	Chicken Varavu
2.	Kadambu
3.	Sorotta
4.	Kasargod pulivaalam
5.	Chemeen kalthappam
6.	Golibajji
7.	Kadala kachiyathu

3.3.3.1 Chicken Varavu

Ingredients (1 serving)

- Grated coconut – ½ cup (60g)
- Chicken – 1 cup (240g)
- Green chilli – 2 nos
- Oil – 2 ½ tbsp (35g)
- Cardamom – 1 nos
- Cinnamon stick - 1 nos
- Onion – ½ cup (60g)
- Crushed ginger garlic – ½ tbsp
- Curry leaves – As needed
- Turmeric powder – ¼ tsp
- Roasted Kashmiri chilly powder – ½ tbsp
- Salt – as needed
- Lemon juice – ¼ tsp
- Water – 1 ½ cup
- Roasted coriander powder – ½ tbsp
- Black pepper powder – 1 tsp
- Garam masala – ½ tsp

Preparation

- Heat 1 tsp oil in a pan , add ½ cup of grated coconut , fry it for 3 to 4 minutes. Transfer it into a bowl.
- Heat 2 tbsp coconut oil , add 1 cardamom , 1 cinnamon stick, ½ cup of sliced onion in a kadai. Sauté well.
- Then add ½ tsp crushed ginger garlic , 2 green chilli and some curry leaves. Soak well.
- Add one cup of chicken to it, sauté well for 3 to 4 minutes in high flame.
- Add ¼ tsp turmeric powder, ½ tbsp roasted Kashmiri chilli powder, salt as needed and ½ tsp lemon juice.
- Add 1 cup of water, mix it, close the lid for 6 to 8 min, such that the gravy becomes ¼ th, then add ½ tbsp roasted coriander powder , ½ tsp pepper powder, and ½ tsp garam masala. Mix well.

- Close the lid for 2 minutes until it cooks well. Then add ½ cup of roasted coconut , mix well and close the lid for another 3 minutes.
- Chicken Varavu is ready to serve

3.3.3.2 Kadambu

Ingredients (1 serving)

- Soaked raw rice – ½ cup (125g)
- Grated coconut – $^{1/3}$ cup (175g)
- Onion – 1/3 cup (175g)
- Salt as needed
- Oil – 5 tbsp (75ml)

Preparation

- Add ½ cup of soaked raw rice into the blender with a pich of salt to taste and litter amount of water , blend it as a corse batter.
- Then add grated coconut and onion into the batter and blend again it in a semi liquid consistency.
- Add the mixture in the pan and stir it until it becomes a thick paste.
- Allow it to cool , mix it very well
- Make the mixture as small balls and steam it for about 15 minutes in high flame .
- Kadambu is ready to serve.

3.3.3.3. Sorotta

Ingrediants

- Maida – ½ cup (60g)
- Dalda – ¼ cup (30g)
- Salt – as needed
- Turmeric powder – ½ tsp
- Ghee – 1tbsp (15g)
- Corn flour – ¼ cup (30g)
- Water – ¼ cup
- Oil – 4tbsp (20g)

Preparation

- Add ½ cup of maida in a bowl , then add ½ tsp turmeric powder for colour , 1 tsp ghee, salt as needed , and add some water , mix well such that the batter has the consistency of a chappathi dough.
- Then make it into small balls and flatten them into even thin layers.
- In another bowl add ¼ cup of dalda , ¼ cup cornflour , mix well until it changes to a paste form.
- Spread generous amount of dalda into the flattened dough , stack another chapathi over this , spread dalda mix again , this process is repeated for 3 times , such that it forms a five layered tower.
- Roll this stacked chapathi , then cut it into small circular pieces.
- Heat oil in a pan in high flame , then fry this sorotta until it becomes crispy , spread some sugar (if needed) for taste and serve it.

3.3.3.4. Kasargod pulivaalam (1 serving)

Ingrediants

- Soaked white rice – ½ cup (125g)
- Grated coconut – ½ cup (125g)
- Cooked rice – $^{1/3}$ cup (80g)
- Salt – as needed
- Egg – 1nos (50g)

Preparation

- Soak ½ cup white raw rice for 4 hours.
- Grind this soaked white rice along with ½ cup grated coconut (add salt and water as needed), then add $^{1/3}$ cup of cooked rice.
- When this mixture turns to a thick consistency, add 1 egg in it , grind it to a fine consistency.
- Heat 5 tbsp oil in a pan, pour the batter in the form of a long rod shape by hand, fry it until it turns into a light brown color.

3.3.3.5.Chemeen kalthappam (1 serving)

Ingredients

- Soaked white raw rice – ½ cup (60g)
- Prawns – ½ cup (60g)
- Crushed ginger garlic – 1 tsp
- Chilli powder – ½ cup
- Turmeric powder – ½ tsp
- Black pepper powder – ½ tsp
- Salt as needed
- Oil – 5 tbsp (75ml)
- Green chilli – 2 nos
- Curry leaves – ½ handful
- Onion – ½ cup (60g)
- Garam masala – ¼ cup
- Cooked rice – ¼ cup (30g)
- Grated Coconut – ¼ cup (30g)
- Fennel seed - ¼ cup
- Egg (small) – 1 nos (50g)
- Water – ½ cup
- Ghee – 1 tsp

Preparation

- Soak ½ cup of white rice for 2 hours
- For preparing prawns masala , take ½ cup prawns in a bowl add 1 tsp crushed ginger garlic , ½ tsp chilli powder , ½ tsp turmeric powder, ½ tsp black pepper powder , and salt as needed. Mix well , fry in a pan by adding 3 tbsp oil
- Then add 2 tbsp oil in another pan add some green chilli and curry leaves, add ½ cup sliced onion , and add salt as needed.
- Add ¼ tsp garam masala then add fried prawns in it and mix well , then add some coriander leaves .

- Grind ½ cup of soaked raw rice , ¼ cup of cooked rice , ¼ cup grated coconut and a small piece of onion , ¼ tsp fennel,1 egg, salt and water as needed. Grind it in the form of a smooth consistency .
- Add 1 tsp ghee in a pan , transfer the grinded mixture into it , then add the prepared prawn's masala in it .
- Close the lid for 15- 20 min in low flame , such that it reaches its consistency .

3.3.3.6 Goli bajji (1 serving)

Ingredients

- Refined wheat flour ½ (125g)
- Rice flour – 1 tbsp (15g)
- Corn flour – 1 tsp (5g)
- Chilli powder – 1 tsp
- Salt as needed
- Ginger 5 g
- Onion 1/3 cup (175g)
- Baking soda a pinch
- Curry leaves - as needed
- Oil - 5 tbsp (75ml)

Preparation

- Take a bowl add ½ cup of refined wheat flour, 1 tbsp rice flour , 1 tsp chilli powder, 1tsp cornflour, salt as needed, 5g ginger , 1/3 cup of onion, and a pinch of baking soda
- Mix it with water to get a semi liquid consistency.
- Take a pan , add oil to it and add the mixture into the pan as small sized ball
- Fry it until it becomes golden brown colour
- Goli bajji is ready to serve as evening snack

3.3.3.7 Kadala kachiyathu (1 serving)

Ingredients

- Roasted Bengal gram – ¾ cup (175g)
- Soaked white raw rice – ½ cup (125g)
- Grated coconut – ½ cup (125g)
- Egg – 1 cup (50g)
- Sugar – 2 tbsp
- Turmeric powder – pinch
- Oil – 5 tbsp (75ml)

Preparation

- Add ½ cup of soaked white raw rice , half cup of coconut with one egg in a blender.
- Add 2 tbsp sugar and a pinch of turmeric powder into it.
- Blend it well until it becomes a semi liquid consistency.
- Add ¾ cup of roasted Bengal gram into the mixture and fry it in a pan immediately before get too soaked in the mixture.
- Fry it until golden brown colour in a medium flame.
- Kadala kachiyathu is ready to serve.

Selected traditional foods

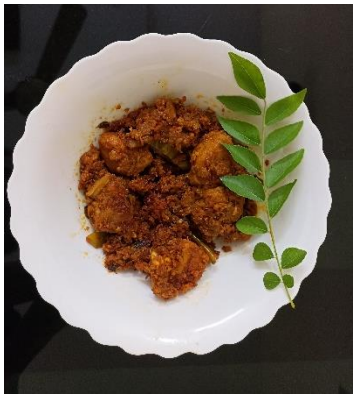


Plate 1 : Chicken varavu

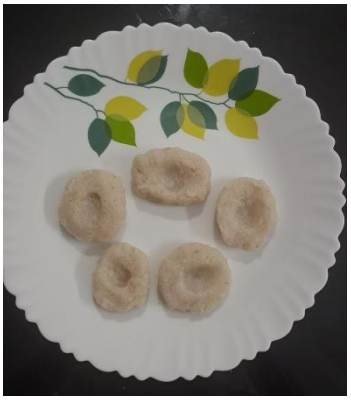


Plate 2 : Kadambu

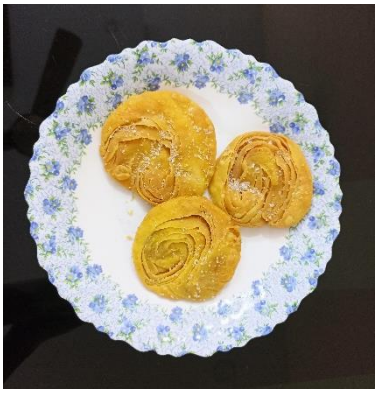


Plate 3 : Sorotta

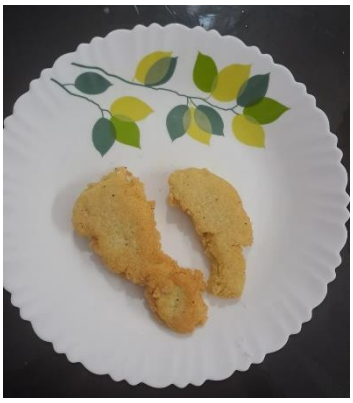


Plate 4 : Kasargod pulivaalam

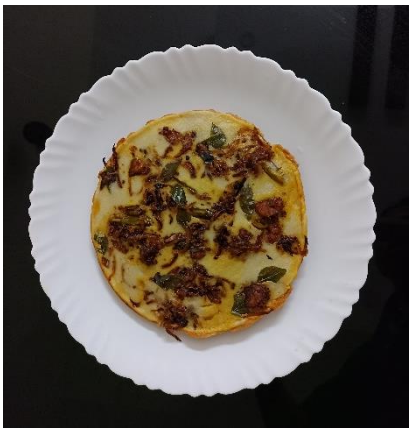


Plate 5: Chemeen kalthappam

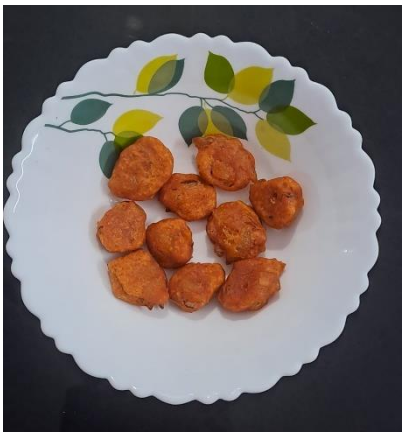


Plate 6 :Goli bajji

Plate 7: Kadala kachiyathu

3.3.4 To develop a nutritive value selected food in Kasargod

The nutrients chosen for nutritive value analysis are based on the high nutritional content of the dish, which includes energy, protein, fat, carbs, iron, calcium, phosphorus, potassium, magnesium, sodium, and zinc.

Energy

Energy is the ability to do work or generate heat. Nutrition refers to the energy derived from food and beverages that our bodies use for various tasks such as breathing, blood circulation, and muscle movement. The energy produced by mitochondria in cells is stored as glycogen in the liver and muscles. The body stores energy from food breakdown as adenosine triphosphate (ATP), a high-energy molecule. ATP is sometimes referred to as energy currency.

Carbohydrate

Our body uses carbohydrates as its primary energy source. These are the carbohydrates, dietary fiber, and sugars found in plant-based diets and dairy products. Sugar molecules make up carbohydrates, or "carbs." Carbohydrates are one of the three primary nutrients present in foods and beverages, along with proteins and fats. Glucose is produced by your body from the breakdown of carbs. The primary energy source for the cells, tissues, and organs in your body is glucose, sometimes known as blood sugar. Glucose can be utilized right away or saved for later use in the muscles and liver. Most recommendations state that an individual should get 45–65% of their daily calories from carbs.

Protein

Body needs protein to function correctly as well as to build and repair new cells. A diet rich in protein is essential for maintaining a healthy weight. A diverse range of foods contain protein. Foods high in protein include meat, fish, eggs, dairy products, seeds, nuts, and legumes like beans and lentils. The building ingredients known as amino acids are what make up proteins. About twenty distinct amino acids can be found that combine in various ways. They help your body create new proteins like muscle and bone as well as other substances like hormones and enzymes. They are a source of energy that it can also consume.

Fat

Essential fatty acids, which the body is unable to produce on its own, are found in fat. The body can better absorb vitamins A, D, and E when fat is present. Because these vitamins are fat-soluble, lipids are the only substance that can assist them absorb. Body fat is created when fat is not utilized by your body's cells or transformed into energy. Similarly, surplus proteins and carbs are also turned into body fat. Every kind of fat has a lot of energy. Regardless of its type, one gram of fat yields 9 kcal (37 kJ) of energy, while one gram of carbohydrate and protein

Calcium

Calcium, a mineral, is most frequently linked to strong bones and teeth, but it also has a significant impact on blood clotting, muscle contraction, regular heart rhythms, and neuron function. The body stores 99 percent of its calcium in the bones, with the remaining 1 percent in muscles, blood, and other tissues. Intake of calcium for women aged 19 to 50 is recommended at 1,000 mg per day; for women aged 51 and beyond, it is 1,200 mg. The RDA is 1,000 mg for women who are pregnant or nursing. Men aged 19 to 70 have an RDA of 1,000 mg, whereas men aged 71 and beyond have an RDA of 1,200 mg.

Potassium

One mineral you can get from your diet is potassium. Moreover, it is an electrolyte. Electrical impulses are carried throughout the body by electrolytes. The kidneys, heart, muscles, and the nervous system's ability to transmit messages are all impacted by potassium. According to the U.S. Dietary Reference Intakes, there is insufficient data to determine a potassium Recommended Dietary Allowance (RDA).AI is 2,300 mg per day for women ages 14 to 18 and 2,600 mg per day for women ages 19 and beyond. Depending on age, the AI for women who are pregnant or nursing ranges from 2,500 to 2,900. The AI is 3,000 mg for men ages 14 to 18 and 3,400 mg for men ages 19 and above. Adults are thought to consume 2,320 mg of potassium on average per day for women and 3,016 mg per day for males.

Magnesium

An abundant mineral in the body, magnesium can be found in a variety of foods that are naturally occurring, added to other food products, purchased as a dietary supplement, and found in some medications (such as laxatives and antacids). Glycolysis, oxidative phosphorylation, and energy production all require magnesium. It's necessary for the creation of DNA, RNA, and the antioxidant glutathione, and it helps build bone structure. Men's 400–

420 mg and women's 310–320 mg daily are the Recommended Dietary Allowances (RDA) for individuals aged 19–51 and over. 350–360 mg per day are needed during pregnancy, and 310–320 mg during nursing.

Sodium

Sodium chloride, a synonym for salt, is composed of approximately sixty percent chloride and 40% sodium. In addition to being a binder and stabilizer, it gives food flavor. It also serves as a food preservative since a high salt content inhibits the growth of microorganisms. To conduct nerve impulses, contract and relax muscles, and maintain the ideal balance of water and minerals in the body, the human body needs a tiny quantity of sodium. For these essential processes, we might need 500 mg of sodium every day. The minimum levels of sodium consumption utilized in randomized controlled studies that did not reveal a shortfall but nevertheless permitted a sufficient intake of nutrient-dense foods naturally containing sodium were used to create guidelines for appropriate intakes (AI) of sodium. 1.500 mg of AI per day are recommended for men and women 14 years of age and above, as well as for expectant mothers.

Zinc

The body only requires minute amounts of zinc, despite the fact that nearly 100 enzymes depend on it to carry out essential chemical reactions. It has a significant role in the synthesis of proteins, the maintenance of a healthy immune system, the synthesis of DNA, and the proliferation of cells. For those aged 19 and above, the Recommended Dietary Allowance (RDA) is 11 mg for men and 8 mg for women per day. Eleven milligrams are needed during pregnancy and twelve milligrams during nursing. Tolerable Upper Intake Level (UL): The highest amount of food consumed each day that is not expected to have a negative impact on health. All males and females who are 19 years of age or older have a daily zinc intake of 40 milligrams.

Iron

The mineral iron can be found in many foods naturally, as an addition to some food items, and as a dietary supplement. The erythrocyte (red blood cell) protein hemoglobin, which carries oxygen from the lungs to the tissues, requires iron as a necessary component. The two main types of dietary iron are nonheme and heme. Heme and nonheme iron are present in meat, seafood, and poultry, while only nonheme iron is present in plants and iron-fortified meals.

About 10% to 15% of the total iron intake in western nations comes from heme iron, which is created when iron mixes with protoporphyrin IX. You require 8.7 mg of iron per day for men over the age of 18, and 14.8 mg per day for women between the ages of 19 and 50. For women over 50, take 8.7 mg daily.

Phosphorus

A person's body weight is composed of 1% minerals, including phosphorus. The body contains the second most of this mineral. Each and every biological cell contains it. Tooth and bone make up the majority of the body's phosphorous content. How the body consumes fats and carbohydrates is significantly influenced by it .Additionally, the body needs it to produce protein for tissue and cell growth, maintenance, and repair. In addition, phosphorus aids in the synthesis of ATP, a chemical the body uses as a reserve of energy. The recommended daily allowance (UL) for phosphorus in adult males and females aged 19 to 70 years is 4,000 mg, while for older persons aged 71 and beyond, it is 3,000 mg. Ages 14 to 50 years old: the UL is 3,500 mg for nursing mothers and 3,500 mg for pregnant women.

According to Aneena (2009), it was reported that the sodium content of other traditional foods varied from 0.016 to 9.49 mg per 100g. the potassium content of traditional foods varied from 0 to 566.71 mg $100g^{-1}$

4. RESULT AND DISCUSSION

Result of present study on " Documentation and nutritive evaluation of traditional foods of Kerala – Kasargod district are presented in this chapter under the following headings :

4.1 Frequency of preparation of traditional food items

4.2 Reasons for preference of traditional food

4.3 How often traditional foods are prepared

4.4 Individual preference for traditional food or non-traditional food

4.5 Traditional kitchen utensils

4.6 Nutritive value calculation of traditional food item collected .

4.1 Frequency of preparation of traditional food item

The frequency of preparation of different traditional food by different individuals for breakfast lunch and snacks are given in Table 1

Table 4 : Frequency of preparation of traditional food

Frequency	No of Subject (n=20)
Daily	9 (45%)
Weekly twice	8 (40%)
Weekly thrice	3 (15%)

From the table, it is evident that 45% of sample population (n= 20) prepared traditional food items daily , 40% of sample population prepared traditional food items weekly twice, 15% of sample population prepared traditional food items weekly thrice.

4.2 Reason for preference of traditional food

The details regarding the reasons for preference of traditional foods among different communities are given in Table 2

Table 5: Reason for preference of traditional food

Reasons	No of subjects (n =20)
Healthy	8 (40%)
Tasty	6 (30%)
No adulterant	2 (10%)
Less expensive	0
Ingredients are locally produced	4 (20%)

From the table, it is evident that 40% of sample population (n= 20) preferred traditional food because of its health benefits, 30% of sample population preferred traditional food weekly because of its taste , 10% of sample population preferred traditional food as there was no adulterant in it. No one among the sample preferred traditional food because of less expensive. 20% of sample population preferred traditional food because of the ingredients are locally produced.

4.3 How often traditional foods are prepared

Frequency on how often traditional foods is prepared are given in table 3

Table 6 : How often traditional foods are prepared

Frequency	No of Subject (n=20)
Occasionally	18 (90%)
Never	2 (10%)

From the table it is evident that 90% of the sample population (n=20) prepared traditional foods occasionally and the remaining 10% never prepared any.

2.4 Individual preference for traditional food or non-traditional food

The frequency of individual preference for traditional or non - traditional foods are given in table 4

Table 7 : Individual preferences on traditional or non - traditional food

Preferences	No of Subject (n=20)
Traditional food item	15 (75%)
Non – Traditional food item	5 (25%)

From the table it is evident that 75% of the sample population (n=20) preferred traditional food items and the remaining 25% preferred non-traditional food items.

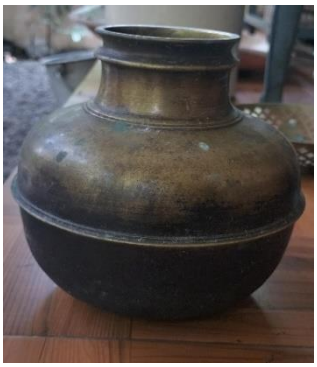
4.5 Traditional kitchen utensils

Information on traditional household utensils and equipment's used were collected and the list is presented in the table 8

Plate 8 : Traditional kitchen utensils

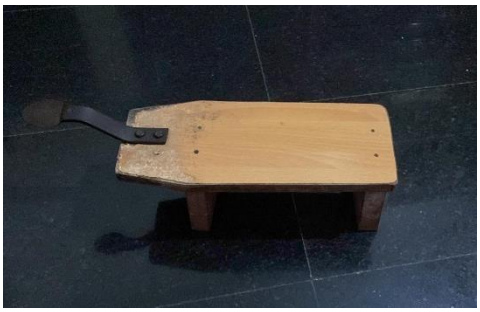
Aattukallu

Ammikallu



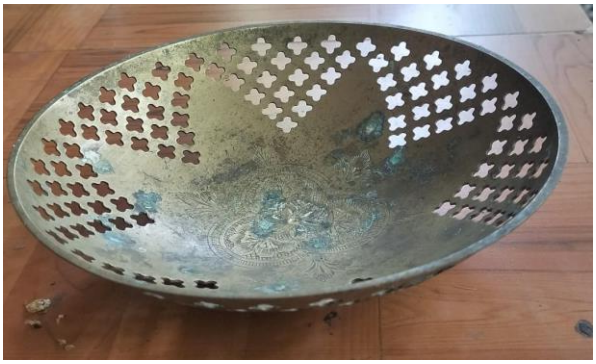
Kudam

Arakallu



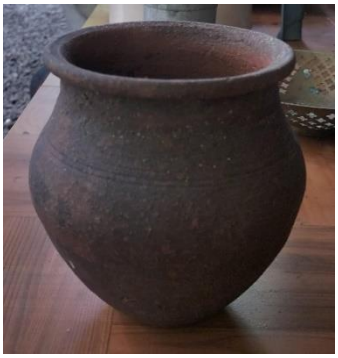
Chirava

Uruli

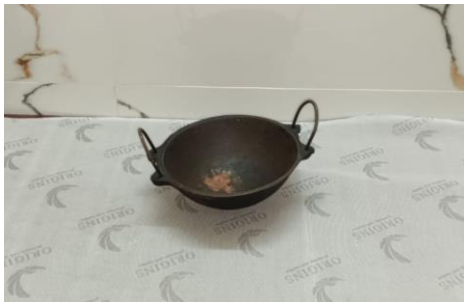


Ottupathram

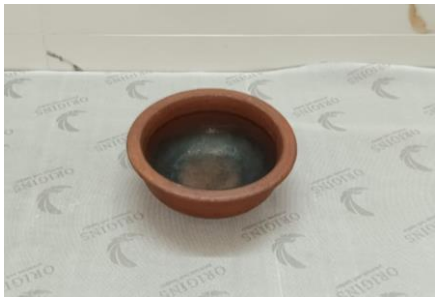
Para



Mann kudam

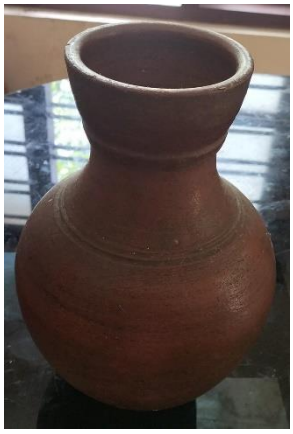


Cheenachatti

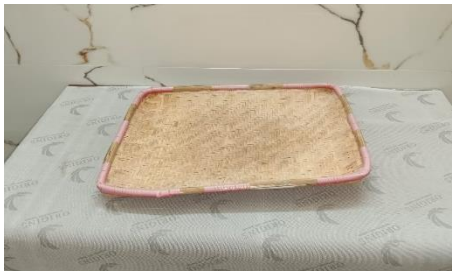


Mannchatti

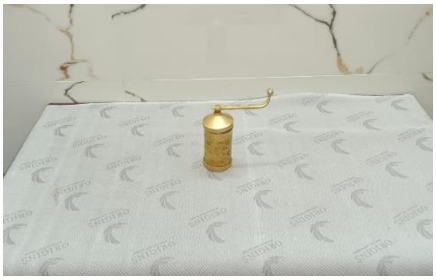
Bharani



Kooja



Muram



Seva nazhi

Table 8 : List of traditional kitchen utensils and equipment's

Sl.no	Utensils and equipment's	Purpose of use
1.	Aattukallu	For grinding and crushing
2.	Ammikallu	For grinding
3.	Arakallu	For mashing and grinding
4.	Chirava	For grating
5.	Uruli	For cooking purpose
6.	Ottupathram	For cooking purpose because of its durability,heat conductivity and cultural significance
7.	Para	For paddy measuring
8.	Cheena chatti	For cooking and frying
9.	Mann chatti	For cooking
10.	Bharani	For storage and fermentation
11.	Kooja	For cooling water
12.	Muram	For grading,sorting and cleaning
13.	Sevanazhi	To prepare a wide range of Indian snacks
14.	Kudam	For storage
15.	Mankudam	For cooling water

4.2 Nutritive value calculation of traditional food collected

Table 9 : Nutritive value calculation of traditional food

Sl.no	Name of food	Energy (kcal)	CHO (g)	Protein (g)	Fat (g)	Ca (mg)	K (mg)	P (mg)	Zn (mg)	Fe (mg)
1.	Chicken varavu	991.25	9.8	55.5	81.12	48.75	958.2	487.2	2.2	2.79
2.	Kadambu	1920.16	125.56	19.28	147.48	47.56	864.75	294.6	2.53	3.09
3.	Sorotta	903.09	71.23	6.58	65.34	12.44	88.8	66	0.53	1.07
4.	Kasargod pulivaalam	1980.2	167.38	27.6	132.4	50.5	625	409	3.7	3.9
5.	Chemeen kalthappam	1252	78.53	23.63	92.3	88.16	487.2	347	2.36	2.5
6.	Goli bajji	1274	125	19.2	76.97	73.5	504	195.8	1.12	3.02
7.	Kadala kaachiyathu	2423.19	222.77	60.8	142.39	147.79	501	892.82	2.8	19.09

Macro nutrients and micro nutrients of seven different traditional foods are listed here. Among these food items *kadala kaachiyathu* has highest calorie (2423.19kcal) and the lowest one is *sorotta* (903.09). Almost all food items have sufficient amount of carbohydrates but the highest of these are *kadala kaachiyathu* (222.77g) and the lowest one is chicken varavu (9.8g).

Highest protein content is noticed in *kadala kaachiyathu* (60.8g) the lowest of these are in *sorotta*(6.58g). other traditional food have protein content between 9.2 to 55.5 g. as there are more fat sources are selected ,all the food item have enough amount of fat content in it. all of this lowest amount of fat is in *chicken vararvu* (81.12g) and the highest in *kadambu* (147.48g)

Kadala kaachiyathu contain highest amount of calcium (147.79mg) *sorotta* contain the lowest amount (12.44mg). highest amount of potassium is noticed in *chicken varavu* (958.2mg) *sorotta* contain the lowest amount (88.8mg).

Phosphoros content is mostly present in *kadala kaachiyathu* (892.82mg) and the lowest amount of it in *sorotta*(66mg). Amount of zinc present in *kadala kaachiyathu* (2.8mg). Another micro nutrient is iron that mostly present among this food is in *kadala kaachiyathu* (19.09mg) lower amount is noticed in *sorotta* (1.07mg)

6. SUMMARY AND CONCLUSION

The present study entitled “Documentation and nutritive evaluation of traditional foods of Kerala – Kasargod district” was undertaken with the aim of identifying and collecting information on there traditional food habits . The Kasaragod district is renowned for its diverse culinary traditions and rich cultural heritage. Its cultural identity is a blend of Malabar and Tulu influences, influenced by its adjacency to Karnataka. While traditional Kerala cuisine, featuring staples like rice, coconut, and spices, is predominant, there are also traces of Tulu Nadu cuisine, exemplified by dishes such as kori roti (chicken with crispy rice wafers). Given its coastal location, seafood, particularly fish, holds a significant place in the local diet, with popular dishes including prawn delicacies like chemeen kalthappam. Additionally, Kasaragod is famed for its distinctive assortment of snacks and sweets. Population above the age of 40 years with knowledge in traditional food preparations were selected randomly from each study locality.to collect the relevant information.

It was found that 75% of the sample population (n=20) preferred traditional food items and the remaining 25% preferred non-traditional food items. 45% of sample population prepared traditional food items daily , 40% of sample population prepared traditional food items weekly twice, 15% of sample population prepared traditional food items weekly thrice. Also, 40% of sample population preferred traditional food because of its health benefits, 30% of sample population preferred traditional food weekly because of its taste , 10% of sample population preferred traditional food as there was no adulterant in it. No one among the sample preferred traditional food because of less expensive. 20% of sample population preferred traditional food because of the ingredients are locally produced and 90% of the sample population prepared traditional foods occasionally and the remaining 10% never prepared any.

The Nutritive value of there foods were also calculated. Macro nutrients and micro nutrients of seven different traditional foods are listed here. Among these food items *kadala kaachiyathu* has highest calorie (2423.19kcal) and the lowest one is *sorotta* (903.09). Almost all food items have sufficient amount of carbohydrates but the highest of these are *kadala kaachiyathu* (222.77g) and the lowest one is chicken varavu (9.8g).

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Thus, it is plausible to draw the conclusion that while Kasargod has an abundance of diverse traditional dishes, many of them are disappearing. The traditional eating habits and patterns witnessed changes and transitions. The purpose of documenting traditional foods in this study is to prevent these things from becoming endangered. Future research could be done to record, reproduce and spread awareness of indigenous Kasargod cuisine.

REFERENCES

Anhonacker, Filiep & Kühne, Bianka & Gellynck, Xavier & Guerrero, Luis & Hersleth, Margrethe & Verbeke, Wim. (2013). Innovations in traditional foods: Impact on perceived traditional character and consumer acceptance. *Food Research International. 54. 10.1016/j.foodres.2013.10.02*

Antonia Trichopoulou, Stavroula Soukara, Effie Vasilopoulou,Traditional foods*: a science and society perspective,Trends in Food Science & Technology,Volume* 18, Issue 8,2007,

Basu, Mrittika & Dasgupta, Rajarshi. (2023). *Exploring Indigenous Water Knowledge, Values, and Practices: Insights and Examples.* 10.1007/978-981-19-9406-7_1.

Bautista-González, Joshua & Montoya, Adriana & Bye, Robert & Esqueda, Martín & Herrera, María. (2022). Traditional knowledge of medicinal mushrooms and lichens of Yuman peoples in Northern Mexico. *Journal of Ethnobiology and Ethnomedicine. 18. 10.1186/s13002-022-00550-8.*

Dasappa, Indrani & Rao, Gandham. (2011). *South Indian Parotta: An Unleavened Flat Bread.* 10.1016/B978-0-12-380886-8.10003-0.

Da Silva, C. M., Silva, K. G. C., Soares, S. C., & De Almeida, J. G. S. (2024*). Dialogue of knowledges: the importance of the partnership between scientists and indigenous peoples for the preservation of traditional knowledge*. Delos, 17(53), e1368

Devarajan, Agilandeswari & Mohan Maruga Raja, Muthu Kumaradoss. (2017*). MARKER BASED ANALYTICAL STUDIES ON RASAM: A SOUTH INDIAN TRADITIONAL FUNCTIONAL FOOD*. World Journal of Pharmaceutical Research. 6. 2054-2065. 10.20959/wjpr20178-9181.

do Prado FG, Pagnoncelli MGB, de Melo Pereira GV, Karp SG, Soccol CR. *Fermented Soy Products and Their Potential Health Benefits: A Review. Microorganisms*. 2022 Aug 9;10(8):1606. doi: 10.3390/microorganisms10081606. PMID: 36014024; PMCID: PMC9416513.

Gokhale, Jyoti & Lele, Smita & Ananthanarayan, Laxmi. (2021). Indian Traditional Foods and Diets: *Combining Traditional Wisdom with Modern Science of Nutraceuticals and Functional Foods*. 10.1007/978-3-030-83017-5_18.

Ghosh D, Chattopadhyay P. *Preparation of idli batter, its properties and nutritional improvement during fermentation.* J Food Sci Technol. 2011 Oct;48(5):610-5. doi: 10.1007/s13197-010-0148-4. Epub 2010 Nov 16. PMID: 23572795; PMCID: PMC3551127.

Ghosh S, Meyer-Rochow VB, Jung C. *Embracing Tradition: The Vital Role of Traditional Foods in Achieving Nutrition Security.* Foods. 2023 Nov 22;12(23):4220. doi: 10.3390/foods12234220. PMID: 38231593; PMCID: PMC10706084

Jorge Jordana, *Traditional foods: challenges facing the European food industry*, Food Research International, Volume 33, Issues 3â€“4,2000,Pages 147-152,ISSN 0963-9969,

Jose, Ajoy & Manchikanti, Padmavati. (2021). TRADITIONAL KNOWLEDGE – THE CHANGING SCENARIO IN INDIA. *Indonesian Journal of International Law. 18. 10.17304/ijil.vol18.3.817.*

Kala, C.P., Nautiyal, S. *Traditional food knowledge of local people and its sustainability in mountains of Uttarakhand State of India*. J. Soc. Econ. Dev. 25, 32–51 (2023).

Kapoor, R., Sabharwal, M., & Ghosh-Jerath, S. (2022). *Indigenous foods of India: A comprehensive narrative review of nutritive values, antinutrient content and mineral bioavailability of traditional foods consumed by indigenous communities of India*. Frontiers in sustainable food systems, 6, 696228.

Krishnakumar, T.. (2019). *TRADITIONAL FOODS OF INDIA*. 10.13140/RG.2.2.18647.11684.

Luis Guerrero, Maria Dolors GuÃ rdia, Joan Xicola, Wim Verbeke, Filiep Vanhonacker, Sylwia Zakowska-Biemans, Marta Sajdakowska, Claire Sulmont-RossÃ©, Sylvie Issanchou, Michele Contel, M. Luisa Scalvedi, Britt Signe Granli, Margrethe Hersleth, *Consumer-driven definition of traditional food products and innovation in traditional foods*. A qualitative cross-cultural study, Appetite, Volume 52, Issue 2,2009,Pages 345-354,ISSN 0195-6663,

P. Nongdam, Leimapokpam Tikendra, *"The Nutritional Facts of Bamboo Shoots and Their Usage as Important Traditional Foods of Northeast India",* International Scholarly Research Notices, vol. 2014, Article ID 679073, 17 pages, 2014.

Preetam Sarkar, Lohith Kumar DH, Chanda Dhumal, Shubham Subrot Panigrahi, Ruplal Choudhary*, Traditional and ayurvedic foods of Indian origin,Journal of Ethnic Foods*, Volume 2, Issue 3,2015,Pages 97-109,ISSN 2352-6181,

Rahul Biswas, Mahabub Alam, Animesh Sarkar, Md Ismail Haque, Md. Moinul Hasan, Mominul Hoque,*Application of nanotechnology in food: processing, preservation, packaging and safety assessment,* Heliyon, Volume 8, Issue 11, 2022, e11795, ISSN 2405-8440,

Raikar, Sanat Pai. *"Indian cuisine".* Encyclopedia Britannica, 3 Apr. 2024,

Singh RK, Bhardwaj R, Singh A, Payum T, Rai AK, Singh A, Wangchu L, Upadhyay S. Mainstreaming Local Food Species for Nutritional and Livelihood Security: *Insights From Traditional Food Systems of Adi Community of Arunachal Pradesh, India*. Front Nutr. 2021 Aug 16;8:590978. doi: 10.3389/fnut.2021.590978. PMID: 34485354; PMCID: PMC8415219.

S, R. C. N. (2016*). Food habits and the changing social scenario in the urban Kerala*

Tamang, J.P. (2020). History and Culture of Indian Ethnic Fermented Foods and Beverages. In: Tamang, J. (eds*) Ethnic Fermented Foods and Beverages of India: Science History and Culture. Springer, Singapore*

Trichopoulou A. *Mediterranean diet, traditional foods, and health*: evidence from the Greek EPIC cohort. Food Nutr Bull. 2007 Jun;28(2):236-40. doi: 10.1177/156482650702800213. PMID: 24683683.

Wang, Y., Zhang, C., Liu, F., Jin, Z., & Xia, X. (2023). *Ecological succession and functional characteristics of lactic acid bacteria in traditional fermented foods.* Critical Reviews in Food Science and Nutrition, 63(22), 5841–5855.

APPENDIX

Questionnaire for Traditional Recipe

1. Name:

2. Age:

3. Sex: Male/ Female

4. Mostly used traditional preparations for breakfast?

…….

5. Mostly used food item for lunch/ dinner?

……

6. What are the snack that were used during your childhood?

……

7. What is the traditional recipe that you know or followed till now?

Snack/ Beverage/Others

8. How to prepare it?

……

……

……

9. How often do you prepare traditional healthy food ?

(Occasionally/Never)

10. How do you keep seasonal food for long period without getting spoilage?

……..

11. Do you had any traditional kitchen utensils/equipment's now?

…….

12. Are you using it now? If no, give reason.

……

13. Which type of food do you prefer mostly ?

(Traditional/Non traditional)

14. Major reasons for preferring traditional food ?

(Healthy/Tasty/No adulteration/Less expensive/Ingredients are locally produced)

15. How often do you prepare the traditional food ?

(Daily/Weekly thrice/Weekly twice)