

**EXPLORATION OF THE REGIONAL CUISINES OF NILGIRIS  
AND DEVELOPMENT OF AN INTERACTIVE WEB PAGE**

*By*

**R. Krishnaveni**

**(11PD13)**

**A THESIS SUBMITTED TO  
AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER  
EDUCATION FOR WOMEN, COIMBATORE - 641043**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE  
MASTER'S DEGREE IN**

***FOOD SERVICE MANAGEMENT AND DIETETICS***

**MAY, 2013**

**EXPLORATION OF REGIONAL CUISINES OF NILGIRIS  
AND DEVELOPMENT OF AN INTERACTIVE WEB PAGE**

*By*

**R. Krishnaveni**

**(11PD13)**


**A THESIS SUBMITTED TO  
AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER  
EDUCATION FOR WOMEN, COIMBATORE – 641043**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE  
MASTER'S DEGREE IN  
FOOD SERVICE MANAGEMENT AND DIETETICS  
MAY, 2013**

*Certified as bonafide research work*

  
10.5.2013

**Signature of the  
Head of the Department**



**Signature of the Guide**

## CONTENTS

CHAPTER NO.	TITLE	PAGE NO.
	LIST OF TABLES	
	LIST OF FIGURES	
	LIST OF PLATES	
	LIST OF APPENDICES	
<b>I</b>	<b>INTRODUCTION</b>	1
<b>II</b>	<b>REVIEW OF LETERATURE</b>	6
	A. Significance of traditional foods.	6
	B. Traditions and food related taboos for recipes	12
	C. Health benefits and therapeutic uses of cuisines	14
<b>III</b>	<b>METHODOLOGY</b>	18-24
	<p><b>PHASE I</b> Selection of area and designing tools for collection of selected regions of Nilgiris.</p> <p><b>PHASE II</b> Standardization of the recipes.</p> <p><b>PHASE III</b> Development of an interactive web page for the regional cuisines of Nilgiris.</p>	
<b>IV</b>	<b>RESULTS AND DISCUSSION</b>	25-52
	<p>A. Collection of recipes from the selected region of Nilgiris</p> <p>B. Quantitative food frequency pattern of the selected household women</p> <p>C. Standardisation of the cuisines of Nilgiris region.</p> <p>D. Development of an interactive web page.</p>	
<b>V</b>	<b>SUMMARY AND CONCLUTION</b>	53
	BIBLIOGRAPHY	57
	APPENDICES	63

## LIST OF TABLES

<b>CHAPTER NO.</b>	<b>TITLE</b>	<b>PAGE NO.</b>
1.	Collection of recipes from the selected region of Nilgiris	25
2.	Quantitative food frequency pattern of cereals and pulses	27
3.	Quantitative food frequency pattern of vegetables	28
4.	Quantitative food frequency pattern of Fats and oil, spices and beverages	31
5.	Quantitative food frequency pattern of milk and fleshy foods	32
6.	Standardisation of main dish	33
7.	Standardisation of Accompaniments - Vegetables	36
8.	Standardisation of accompaniments - Green leafy vegetables	38
9.	Standardisation of Accompaniments - Poriyal	39
10.	Standardisation of Sweets	40
11.	Standardisation of Snacks	41
12.	Standardisation of Desserts and beverages	43
13.	Mean score for the sensory evaluations of the Main	45
14.	Mean score for the sensory evaluation of the Accompaniments - Vegetables	46
15.	Mean score for the sensory evaluation of the Accompaniments - Green leafy vegetables	47
16.	Mean score for the sensory evaluation of the Accompaniments- Poriyal	48
17.	Mean score for the sensory evaluation of the Sweets	49
18.	Mean score for the sensory evaluation of the Snacks	50
19.	Mean score for the sensory evaluation of the Desserts And Beverages	51

## LIST OF FIGURES

<b>CHAPTER NO.</b>	<b>TITLE</b>	<b>PAGE NO.</b>
1.	Standardisation process	20
2.	Preparation equipments used for preparation and service	35
3.	Variety of beans used for accompaniments	37

## LIST OF APPENDIX

<b>CHAPTER NO.</b>	<b>TITLE</b>	<b>PAGE NO.</b>
1.	Questionnaire to elicit the details of the food frequency pattern of regions	63
2.	Questionnaire to collect details of the recipes of the region	69
3.	Score card for sensory evaluation of recipe	70

## ACKNOWLEDGEMENT

The investigator exalts **God Almighty** for being her refuge and strength and praises Him for His everlasting love, bountiful mercy and amazing grace showered on her throughout the study.

The investigator pays her reverential homage to **(Late) Dr.T.S. AVINASHILINGAM**, Founder and First Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for providing this temple of learning for women. Reverential homage is paid to the **Doyen of Nutrition Hon Colonel Dr. (Tmt) RAJAMMAL P. DEVADAS**, Former Chancellor, Avinashilingam Institute for Home Science and Higher Education for women, Coimbatore, for being a perennial source of inspiration.

The investigator is grateful to **(Late) Mr. T.K. SHANMUGANANDAM, B.A., B.L.**, Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for providing the opportunity, infrastructure and all amenities to conduct the study.

The investigator expresses her gratitude to **Sri.T.S.K.MEENAKSHI SUNDARAM, M.A., M.Phil., Ph.D. (Honorius Caussa)**, Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for providing the opportunity to carry out the study.

She expresses her heartfelt gratitude to Hon. Colonel. **Dr. (Tmt) SAROJA PRABHAKARAN, M.A., Dip. Ed. (Madras), Ph.D. (Mother Teresa)**, Former Vice-Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Director, Halls of Residence, Sri Avinashilingam Education Trust Institution, Coimbatore, for her constant

encouragement and constructive suggestions for the successful conduct of the study.

The investigator owes her special thanks and gratitude to **Dr. (Tmt.) SHEELA RAMACHANDRAN M.Sc., P.G. Dip., Ph.D. (Avinashilingam)**, Vice Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for facilitating to complete the study.

She records her gratitude to **Dr. (Tmt) GOWRI RAMAKRISHNAN, M.Sc., (Madras), M.Phil., Ph.D. (Avinashilingam)**, Registrar, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for providing all the facilities for the smooth conduct of the study.

She expresses her heartfelt thanks to **Dr. (Tmt). K.THANGAMANI, M.Sc., Dip.Ed., M.Phil., Ph.D.,** Dean, Faculty of Home Science, Professor and Head, Department of Home Science Extension Education, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for her help and constant support to carry out the research.

The investigator expresses her deep sense of gratitude and whole hearted thanks to **Dr. (Tmt) G.VASANTHAMANI, M.Sc., Dip. Ed., M.Phil. (Madras), Ph.D., (Avinashilingam)**, Professor and Head of the Department of Food Service Management and Dietetics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.

The investigator expresses her heartfelt thanks to her guide **Dr.(Tmt) S.THILAGAMANI, M.Sc., M.Phil., Ph.D (Avinashilingam)**, Assistant Professor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, whose ability to probe beneath the text was a true gift and her insights have strengthened this study significantly. Her meticulous

guidance, deep concern, constructive suggestions, continued motivation, enduring support and gentle care rendered from the initial to the final level of the study enabled the investigator to complete the research successfully.

The investigator acknowledges with gratitude the good wishes and encouragement of **all the staff members** of the Department of Food Service Management and Dietetics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.

She expresses her heartfelt thanks to the management of the hotels, and Nilgiri village for their permission and guidance in the conduct of study. Her gratitude and special thanks to **web page designer H. Vivek M.C.A,** Coimbatore for support for designing the web page.

The investigator expresses her heartfelt thanks to her **Loving Parents, Brother, Sister and Friends** whose motivation, care, concern and support cannot be expressed in word.

## 1. INTRODUCTION

Globalisation refers to the world wide integration of humanity and is a phenomenon by which the experience of everyday life, is influenced by the diffusion of commodities, reflects a standardisation of cultural expressions around the world. Therefore, it is necessary to understand the language, culture and life style of our country and its partners.

Food consumption culture is one of the most important factors associated with the unique culture of ethnic groups. Food consumption is a basic activity contributing to survival of human beings. Understanding the food culture creates a better understanding and more intimate relationship among countries and people (Koo *et al.*, 2005).

Food culture can be defined as a system for processing and cooking foods combined with food consumption activity and cultural cuisine as the culturally elaborate and transmitted body of food related practices of any given culture (Messer, 1989).

The components of the food culture include such activities as the methods of obtaining, processing and preparation of the raw materials, cooking techniques, setting dishes, tables and eating habits. The word traditional comes from the Latin verb “Trader” which means the transfer doctrines, customs, from generation to generation (Fajan, 2006).

Traditional foods are related to local foods and artisan foods referring to specific ingredients, location of the production and know-how. It could be the food made by grand-mother or by the native people of the country. Traditional foods are used to carry an image of foods tasting good and perceived good for health as related to natural products, no chemical modification, no additives

or bad for health as related to high fat content, Microbial contaminants (Kim *et al.*, 1999).

A traditional food “Product” is a product frequently consumed and associated with specific celebrations and or seasons normally transmitted from one generation to another, made accurately in a specific way according to the gastronomic heritage, with little or no processing and known because of its sensory properties and associated with a certain local area, region or country (Guerrero *et al.*, 2009).

Traditional ingredients are raw materials (species or varieties) or primary products either alone or as an ingredient, that has been used in identification of geographical areas and remains in use today and its characteristics are in accordance with current specification of region or country (Antonia *et al.*, 2007).

Traditional foods apart from being vehicles of culture could also possess health qualities since tradition supports foods which are palatable and healthy. Traditional food producers have been recommended to extend their skills in modern production techniques, management and marketing, as well as in promoting the aspects of their products related to nutritional and health issues (Trichopoulou *et al.*, 2003).

Traditionally a food product not only has to contain traditional ingredients but also has to be processed in a traditional way, according to the traditional recipes. Traditional food products tend to be basic, natural and pure, often in the sense that little or no processing or manipulation has occurred after the primary production (Fajans, 2006).

Traditional vegetables are gathered from both cultivated and uncultivated lands and the knowledge about traditional vegetables is passed on from generation to generation as part of the indigenous knowledge system of the community (Stilwell *et al.*, 2010).

Traditional vegetables lie in their high nutritional value and their ability to thrive under adverse conditions. The United Nations through the International workshop on Traditional knowledge emphasized that traditional food knowledge should continuously be retained for future generation as they will carry out the profound spiritual and identity for self or as people (Modi *et al.*, 2006).

Religions also have a great importance talking about traditional foods, prohibited foods that are numerous, special dishes corresponding to an event of the religious calendars (Bertozzi, 1998).

Religion is one of the main factors determining food avoidance, taboos and special regulation in particular with respects to meat. The rejection of specific foods derives from human cultures, many of which were established for unknown reasons in the past and gains further support until the present from religious sanction (Simoons, 1994).

Several religions impose some foods restriction, For example. Prohibition of pork and not ritually slaughtered meat in Judaism and Islam and port and beef in Hinduism and Buddhism except for Christianity which has no food taboos (Verbekeet *al.*, 2008).

Religious food prescriptions are far easier of adopt than to discard because once a ban is adopt edit tends to be reinforced by strong feelings of disgust (Simoons, 1994).Although the dietary laws imposed by religion may be

rather strict, the amount of people following them is usually quite substantial (Hussaini,1993).

Regional foods are linked in some way to “Origins” and “Tradition”, it implies that producers of regional foods are involved in providing and communicating intangible attribute of heritage, tradition and authenticity in their products offerings (Urry *et al.*, 2007).Regional cuisines for the majority of the discussants were grounded in the historical association with consumers from lower socio-economic and income groupings (Angela *et al.*, 2007).

It reflects past cultural isolation and regional cooking is now a proud part of cultural identity, frequently reserved for festival occasions. But some regional foods now eaten frequently are of relatively recent origin (Meyer, 1977). Indian social and cultural practices have conventionally been based on religion. In India, food is generally treated as a divine and all Indian ancient scripture and religious texts encourage great consideration and care for food preparation, storage, food handing and habits among people (Marthi, 1999; Suderson *et al.*, 2008).

The most characteristic and ancient element of Greek cuisine is olive oil, which is frequently used in the dishes. The basic grain in Greece is wheat, though barley is also grown. The diet of North India is probably the best balanced in the whole country from the nutritional point of view, as it contains plenty of wheat, meat, milk, vegetables and fat. Since cooking fat plays such an important part in North Indian food (Dalda, 1942).

Indigenous and traditional food cultures inevitably have strong locality connections. They are of particular interest in regard to regional food culture and health because they represent the longest period of history of the 1, 50,000 years or so of our species (Eaton *et al.*, 1985).

By generations of cultural shifting, reflection, connection and innovation, in possibly advantageous localities, some communities have gained health advantage in relation to their food supply. Communities can increasingly take advantage of production, processing, transport and communication, information and health technologies to make these outcomes more likely (Wahlqvist, 2006).

Food systems that confer health advantage will themselves be characterized by adequacy and variety to allow for the full range of essential nutrients to be obtained for an omnivorous human species (Eaton *et al.*, 2005). Food and Nutritional policy support Regional food culture through the Food Based Dietary Guidelines (FBDG) approach developed by World Health Organization and FAO, which encourage local food and food system approaches to health policy (World Health Organization, 1998).

Indigenous and traditional foods and food systems are disappearing, however and this may be a significant loss and threat to future personal health and security (Dalda, 1942).

The decline in the use of indigenous foods by many rural communities has resulted in poor diets and increased incidence of nutritional deficiency disorder and diseases (Odhavet *et al.*, 2007). Hence this study will throw light on the exploration of the regional recipes in specific to cuisines in the Nilgiris and was taken with the objectives to

- To explore the staple foods and cuisines of the Nilgiris region.
- Standardise the regional cuisine and develop an interactive web page for wider access.

## **2. REVIEW OF LITERATURE**

The review of the literature pertaining to the study titled “**Exploration of the Regional Cuisines of Nilgiris and Development of an Interactive Web Page**” is discussed under the following heading

### **A. Significance of Traditional foods**

### **B. Traditions and Food related taboos for Regional Recipes**

### **C. Health Benefits and Therapeutic uses of Regional Cuisines**

### **A. Significance of Traditional foods**

Traditional food product 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 individual operating in that territory (Bertozzi, 1998). In order to be traditional, a product must be linked to a territory and it must also be part of a set of traditions, which necessarily ensures its continuity over time (Jordana, 2000).

Traditional cuisine is one of the inherited expression, which has built the territory through the time, behind each recipe there is hidden knowledge about perfect mixtures, doneness and ingredients, qualities among others, that have been passed from one generation to other creating a unique hallmark in the food of a place and sense of belongingness to territory and community (Darby and Karni., 2004).

Traditional food means proven usage in the community market for a time period showing transmission between generations, this time period should be the one generally ascribed as one human generation at least 25 years. Recently a definition of traditional food has been developed through the work of Euro FIR FP6 Network of excellence this is an elaborative definition, which includes statements about ingredients, traditional composition and traditional type of production and or processing (Trichopoulou *et al.*, 2007).

In Europe, the only formal definition found for traditional food products comes from the Italian ministry of agriculture, that traditional food product as “Agrifood product whose method of processing ,storage and ripening are consolidated with time according to uniform and constant local use”.

In order to better understand and predict the likelihood of success or failure of different innovations in traditional foods it is crucial to know the meaning that the word “Traditional” has in consumer mind and what value they relate to this concept. Traditional food products were perceived, in general as simple products with low complexity (Fajans, 2006).

Tradition was well accepted in cultural and gastronomic – related contexts, where it was perceived as something to keep and protect for subsequent generation (Trichopoulou *et al.*, 2007).

Traditional food is a food of a specific feature or features, which distinguish it clearly from other similar product of the same category in terms of the use of “Traditional ingredients (Raw materials or primary products) or “traditional composition” or “traditional type of production and processing method (Vanhonacker *et al*2010).

Traditional foods may be noted that, by their very nature, food products have a land based geographical origin which would suggest the people readily make strong associates between certain foods and geographical locations (Marchenay, 1995).

Traditional compositions are uniquely identifiable in terms of ingredients that was first established prior to the second world war and passed down through generations by oral or other means taking into account eases where composition was abandoned or a time and then reinstated and when

necessary is differentiated from the composition defined by the generally recognized characteristics of the wider food groups to which the product belongs. Traditional type of production and processing has been transmitted from generation and generation through oral tradition (Trichopoulou *et al.*, 2007).

Traditional knowledge is a body of knowledge accrued within a group of people across generation of close contact with nature. It is a local and cumulative body of knowledge, practices and beliefs held by local people (Turner, 2006).

It has been applied prior to the second world war and remains in use taking into account cases where application was abandoned for a time and then reinstated despite its adjustment to binding rules from nation or European food hygiene regulation or the incorporation of technological progress, under the condition that production and / or processing remains in line with methods used originally and that the food intrinsic features such as its physical, chemical, microbiological or organoleptic features are maintained. Traditional vegetables, the edible plants that are used as vegetables are part of traditional production systems and local knowledge (Keller *et al.*, 2004).

The process of “de-localization” of the food system in the twentieth century has weakened the traditional territorial and symbolic links between food and places. The inference is that the concept of regionality in foods may no longer be important or attractive to the modern food consumer; who is faced with such as wide array of exotic and international product all year around (Montanari, 2007).

An opposing view is taken by Driver however; he describes resurgence in the interest in traditional regional dishes in the UK, which perhaps reflects the symbolic importance that particular foods have in culture (Driver, 2007).

Traditional food products are food products of which the key production steps are performed in a certain area at national, regional or local level; which are authentic in their recipe mix of ingredients, origin of raw material and or production process which are commercially available for about 50 years are part of the gastronomic heritage (Kuhne and Gellynnek, 2008).

Traditional foods are seen as a midpoint of culture identity, which belongs to specific society or ethnic and some elements of food preparation and consumption are the visible badges of identity. Preparation and consumption is a combination and intersection of food and culture (Camp 2009). Preparation and consumption food is mean to the identity of a community, age, ethnicity, gender, local occupation and religion (Powell, 2007).

Some argue preparation and consumption closely related to cultural of foods, the tools, techniques and ingredients for which food is prepared it customs and these is one of the best way to understand a culture and ethnic identity (Cinniralla *et al.*, 2012).

One of the most efficient ways to get preliminary insights into the concept underlying traditional food product, as well as innovation from a consumer's point of view is by means of qualitative research techniques, especially by using focus group discussion (Krueger, 1988). Focus group discussion is a method by which a small number of individuals are selected in order to obtain information about their reaction to products and concept (Resurreccion, 1998).

Traditional cuisine brings a past full of perceptive stimuli where smells, tastes, sound, color, textures, etc., create a stronger and delightful connection with cultural identity; however, the global context influences bearers to transform their cultural practices , because as any living body our practices must evolve for answering the requests of our changeable bodies and souls ,and the ideal scenario is a transformation without altering essence that awakes the mentioned connection (Tania *et al.*, 2007).

The Traditional food product concept included aspects related to health, to naturalness, to homemade, artisan, made on the farm, without industrial handling and without additives .Traditional food were popularized from the aspect of tourist attractions and territorial brands for tourist development and promoted in terms of healthy eating (Bender, 1989).

From the perspective of community based tourism, certain elements of local culture and resources are not only attractive to tourists but can simultaneously be used to enhance and rescue local culture and heritage (Flacke, 2008). Traditional diets can be described as nutrient rich and calorie limited. Many wild foods are higher in nutrient content than similar cultivated food (Native Foods and Nutrition, 2002).

Indigenous nutrition can be described as culturally and bioregional specific food related knowledge that results in a dietary pattern meeting basic nutritional needs while avoiding western disease. Traditional food ways are based on an intimated and spiritual connection to the land and entail a reciprocal relationship that must be actively maintained. Several research works have indicated that indigenous knowledge of traditional vegetables is diminishing in communities (Huffman *et al.*, 2002).

The loss of indigenous knowledge results in reduced consumption of traditional vegetable, which contributes to lack of diet diversity. This ultimately translates into food insecurity and micronutrients deficiency, especially among poor communities (Flyman *et al.*, 2006).

Different factors have contributed to the loss of knowledge about traditional vegetables. These include the introduction of new vegetables, politics, changes in lifestyle, the stigma associated with the use of traditional vegetables and habitat loss (Keller *et al.*, 2004).

The introduction of new vegetables has been cited as one of the causes for the loss of knowledge about traditional vegetables. The new vegetables are widely promoted by agricultural research and extension, thus leading to the complete substitution of traditional vegetables. Negative attitudes towards the use of traditional vegetables have also been cited as one of the reasons that contribute to the loss of knowledge about traditional vegetables. In most area traditional vegetables are associated with poverty and primitiveness. As a result most people, especially the youth, have stopped using traditional vegetables because they do not want to be labeled as backward (Ransburg *et al.*, 2007).

According to Vorster the labeling of traditional vegetables as ‘poverty food’ and as indicative of being ‘backward’ is the reason why the youth are not keen to learn about these vegetables. Disparities in the younger generation’s level of knowledge of traditional vegetables could have been due to fact that Tuku village, where Shava conducted his study is characterized by close bonds between the elderly and the younger generation, making possible for the transfer of knowledge to be easier due to an intact traditional culture (Shava 2000).

## **B. Traditions and Food related taboos for regional recipes**

At all stages of human development from the poor to the affluent, there is a sense of local if not regional food culture. Food culture arises out of the place of a people's origin, whether they still live there or not, but it shaped by resources (Climate, land, soil, water & fuel) by belief and information (religion, education and literacy, communication) by ethnicity and by health status and health care (Wahlqvist, 2002).

Food choice and consumption behavior are imbued with social rules and meaning. Meat in particular is a medium rich in social meaning because of its association with cultural habits and rituals both religious and secular (Fiddes, 1992).

With respect to food prescriptions in Islam, Muslims prohibited is the consumption of alcohol, port, blood dead meat and meat which has not been slaughtered according to Islamic ruling It was estimated that 75 percent of Muslim in the United States follow their religions dietary laws meaning that even after having emigrated most Muslims still eat halal (Hussaini, 1993). In Judaism kosher dietary laws have also included the prohibition of eating blood and mixing dairy food and meat (Regenstein, 2003).

The "Christian" system encompasses monastic asceticism and the calendar of fasts and feasts with an ideal goal of spiritual purity through control of bodily urges deriving from Greek and eastern ideas about the Dualism of body and soul (Albala, 2000).

Therefore consumer even have to rely on the seller or outside observers, and put their trust in the information source and information received (Andersen, 1994).

Trust can be defined as "the extent to which one believes that others will not act to exploit one's vulnerability" (Marrow *et al.*,2004). Originally

Korea developed a meat consumption culture because of effect of the nomadic ancient culture (Nam *et al.*, 2010).

South and South Asia has the lowest consumption of meat per capita of any part of the world, although parts of west and central Africa have equally small meat consumption because of the culture and religious taboos affect the consumption of meat (Wang *et al.*, 2004).

Buddhist has an aversion to the slaughter of any animals and they are a powerful influenced in most part of mainland Southeast Asia. This could be due to the poverty of these regions as well as the religious taboo. Therefore, in Asia, relatively high consumption of meat protein occurs in East Asia, whereas it is limited in Southeast Asia. The annual per capita meat consumption of the Southeast Asia is less than half of the East Asia (Nam *et al.*, 2010).

Southeast Asia covering India, Bangladesh, Burma, Thailand, Cambodia, Laos, Vietnam, Indonesia, Malaysia, and Philippines, has similar consumption culture, as it has tropical weather and rice is the staple. On the other hand due to different religious habit and incorporation of different foreign countries food culture, Southeast Asia has versatile consumption culture even within the country (Kwon *et al.*, 2005).

Although Vietnamese also have strong vegetarian tradition influence through Buddhism and meat consumption is low, meat is used in most Vietnamese foods. The most common meats used in Vietnam's cuisines are pork, chicken, fish and sea foods (Milonet *et al.*, 1991).

The consumption of beef in India is to partake in complex inter connected discourses on the sacredness of the cow in dominant caste Hindu India, its centrality to a largely agrarian economy, the attendant taboo on the

consumption of beef, as well as the significance of the cow as a symbol of difference between communities (Harris,1966). Islam the most widely practiced religion in the Middle East prohibits eating pork and blood. Drinking alcohol is also prohibited (Forum, 2009; Tannahill, 1989).

### **C. Health Benefits and Therapeutic uses of Regional Cuisines**

Regional cuisine is a cuisine based upon national, state or local regions. Regional cuisines may vary based upon food availability and trade, varying climates, cooking traditions and practices and cultural difference (The American Food Revolution, 2009).

Cultural cuisine as the culturally elaborated and transmitted body of food related practices of any given culture. It includes the selected basic foods, characteristic flavoring processing rules dealing with acceptable foods and combinations and textures; festival foods, the social context of eating; together with the symbolic combinations of foods in meals, menus and seasonal or lifetime cycle or ritual food and eating (Messer, 1989).

Throughout human history, people have been making adjustments to their food intake, by trial and error and through necessity or opportunity. There have emerged some major food systems which are known by their original location, the people that mainly consume them or the dominant food items or acquisition methods. Their recognition has merit when considering the major risks and benefits of regional food culture (Wahlqvist *et al.*, 2007).

Based on the main food ingredients, food culture groups can be divided into regions.

- North India, Pakistan, Middle east, Asia, North China, North Africa, Europe, North America which use mostly wheat as the main ingredients for food.
- North east and south Asia region use rice as main ingredients.
- Southern part of the U.S. Mexico, Peru, Chile and Africa region use corn as a main ingredients.

- Islands in South East Asia and Pacific area use potato, sweet potato or taro as the main food ingredients (Kim *et al.*, 2005).

The strengths and weakness of various food systems relate to their prospects for survival in a changing world, their ecological sustainability their amenability to commercialization and their health advantage (Cordain *et al.*, 2005).

Indian foods are probably think of its aromatic spices such as turmeric, ginger, red chilies and garam masala (a mixture of cumin, cardamom, black pepper, cinnamon, coriander and other spices) and these spices actually protect against some cancer and turmeric and ginger help fight Alzheimer according to recent studies. Researchers point to the facts that rates of Alzheimer's in India are four times lower than in America, perhaps because people there typically eat 100 to 200 milligrams of curry every day (Darby, 2001).

An intriguing aspects of spice use is its variability among cultures, some cuisines make frequent use of multiple spices sparingly if at all (Shermal, 1998). Use of species involves both benefits and lost. On the positive side, spices are natural pharmaceuticals. Spices plants contain chemical that evolved to determine or eliminate their biotic enemies, both macroscopic (insects) and microscopic (bacteria and fungi) (Walker, 1994).

Ingredients in Indian cuisine include yogurt and lentils that has significant amounts of folate and magnesium and may help stabilize blood sugar (Annlecorapi, 2010). Eating a traditional mediterrance style diet is associated with a 25 percent reduce risk of death from heart disease and cancer (Harvard University Research, 2007).

Protein Energy Malnutrition in Africa has a complex causation- loss of traditional cultural regulation of spacing of pregnancies, rural- urban displacement with increasing population, artificial milk feeding for many years promoted by Nestle (Maclennan, 2004).

The IUNS (International Union of Nutrition Science and other organization ([www.health eating club.org/Africa](http://www.health eating club.org/Africa)) have promoted regional approaches to their work in food and health (Wahlqvist, *et al.*, 1995).

Due to different food resources, different eating methods have been developed. The south East Asia, west Asia, Africa and native Oceania people are ‘hand use- eaters’ the majority of people are Muslims or Hindu believes. People in Korea, Japan, China, Taiwan and Vietnam use spoons and chopsticks whereas other nations use knives forks and spoons (Koot and Kim, 2005).

In the past, the rate of change of food culture has been relatively slow, in response to these factors, but most of the relevant factors are themselves now undergoing rapid change, notably, population, growth, displacement and migration with land degradation, changing affordability with parallel phenomenon of increasing impoverishment and greater affluence, with resource wastage on both counts. In the interest of available and affordable food, for the short to medium terms, an identifiable and sustainable regional food system and culture may be lost (Wahlqvist et al,2007).

The local eco-systems which support these food cultures and whose intrinsic biodiversity is important for planetary health. Because, with a loss of food culture, goes a loss of a sense of identity and dignity (Mccann, 2004).

In general, consumers thought that the usage of traditional products, especially non-food products, is diminishing because of the modern way of living. Classical dishes have a long history, often associated with stories of their origin, which serve to maintain appropriate recipes. But enormous change are occurring in urban population such that the health benefits of traditional cuisine are in danger of being diminished benefits of traditional cuisine are in danger of being diminished (Machennan and Meyer, 2004).

Some ethnics are reported not only facing the problem of deskilling issues related to domestic cooking skills but has started to lost the traditional food culture owing to weakening of old generation to past down the traditional cooking knowledge to the tradition (Bowen and Devine, 2011; Stringer, 2009).

### **3. METHODOLOGY**

The methodology for the study titled “**Exploration of the Regional Cuisines of Nilgiris and Development of an Interactive Web Page**” was adopted as follows.

**Phase I** Selection of area and designing tools for collection of recipes from selected Regions of Nilgiris.

**Phase II** Standardisation of the Recipes.

**Phase III** Development of an interactive web page for the regional cuisine of Nilgiris.

**Phase I Selection of area and designing tools for collection of recipes from selected regions of Nilgiris.**

The area for the study was the selected regions of Nilgiris, in the state of Tamil Nadu, the hills popularly known as Blue Mountains, are part of large mountain chain known as Western Ghats. The Nilgiris district comprises of six taluks namely Ooty, Kundha, Coonoor, Kotagiri, Gudalur and Pandalur (Niligiri Census, 2011). It was originally a tribal land and was occupied by the Todas and Kotas. The Badagas are one of the non tribal populations in the district who reside in the Nilgiris.

The Nilgiris District is basically a horticulture district and the entire economy of the district depends upon the success and failure of horticulture crops like cereals such as ragi, wheat, samai, barely, Pulses such as beans, Vegetables namely cabbage, carrot, beetroot, potato, bamboo shoot, fruits, spices, tea and coffee that are cultivated in the region.

The study was conducted in the selected villages from Kundha taluks in Nilgiris namely Kil-Kundha and Mulligoor village. A total of 100 household

women aged 35 to 65 years were selected for eliciting the details of recipes of the region years and thirty chefs at the Nilgiris Hotel, Hotel Saraswathi and Hotel Gowdha by the quota sampling.

Quota sampling is a type of judgment sampling and is perhaps the most commonly used sampling technique in non-probability category. In quota sample, quotas are setup according to some specified characteristics such as so many in each of several income groups, religious affiliation and so on quota sampling is often used in public opinion studies (Gupta, 1969).

A well structured questionnaire was used to elicit quantitative food frequency pattern, recipes prepared in different occasions such as regional festivals, special conditions such as for pregnant women, lactating mother, and children. The details of the recipes with the occasion of preparation, cooking time, portion size, equipment needed, ingredients used, reason of use of specific ingredients, method of preparation were elicited and were categorised into main dishes, accompaniments, sweets, snacks, desserts and beverages (Appendix I)

## Phase I Collection of Recipes

**Quantitative food frequency  
pattern among household  
women  
N=100**



**Collection of recipes  
among household women  
N=100 and chef's at  
Hotels N=30**

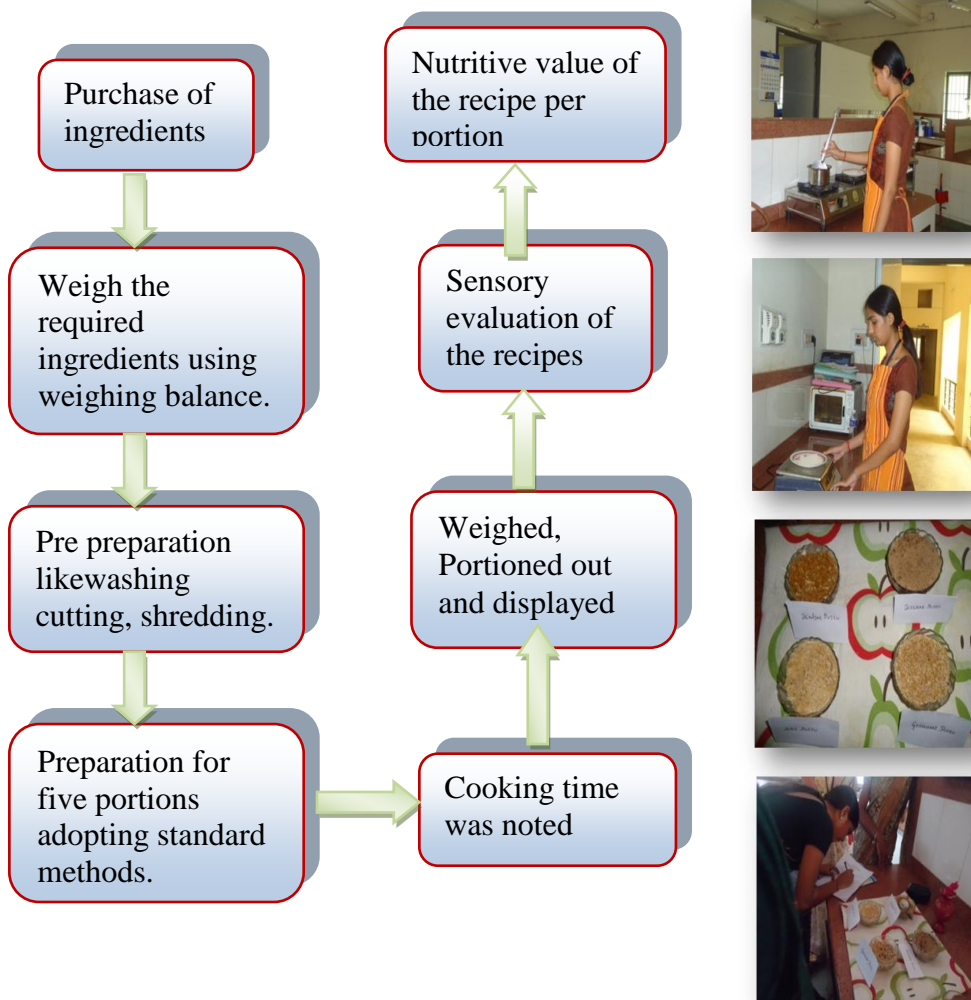
- Frequency of use of different ingredients.
- Quantity of consumption per serving.
- Types of recipes prepared in special occasions and condition
- Details of the method of cooking, cooking time, portion size, method of preparation of the recipes.

- Name of the recipes
- Category.
- Cooking time.
- Portion size.
- Equipment used for preparation of recipes.
- Ingredients used.
- Step wise procedure for preparation.

## Phase II Standardisation of the recipes.

A total of one hundred recipes were collected for standardisation comprising eighteen main dishes, forty one accompaniments, ten sweets, seven desserts and sixteen snacks and eight beverages. The recipes were standardised in the foods laboratory of our university. The recipes were standardised in the following procedure.

### Procedure adopted for standardisation of recipes N=100



Product evaluation is a multi-step process in which a group of individuals respond to stimuli (a set of products) by marking a score card according to a specific set of instruction. These individuals are participate in the test because of their demonstrated sensory skills with that particular category of products(Meigaardet *al.*, 1999).

Nutritive value of the recipes were calculated using Nutritive Value of Indian Foods 2012 with values for Energy, Protein, Fat, Carbohydrates, Fiber, Calcium, Iron, Vitamin-C and Sodium were calculated. Sensory evaluation of the recipes was done using a five point score card and was evaluated by ten panel members and the scores were recorded and their mean values were calculated.

### **Phase III Development of an interactive web page for the regional cuisines.**

A web page for regional recipes was created using [www.avancezone .com](http://www.avancezone.com). steps were followed and tested for its access using the programming language pph

**Step1:**Install the word press content management system from the [avancezone.com](http://avancezone.com).

**Step2:** Select the admin panel with help of username and pass word.

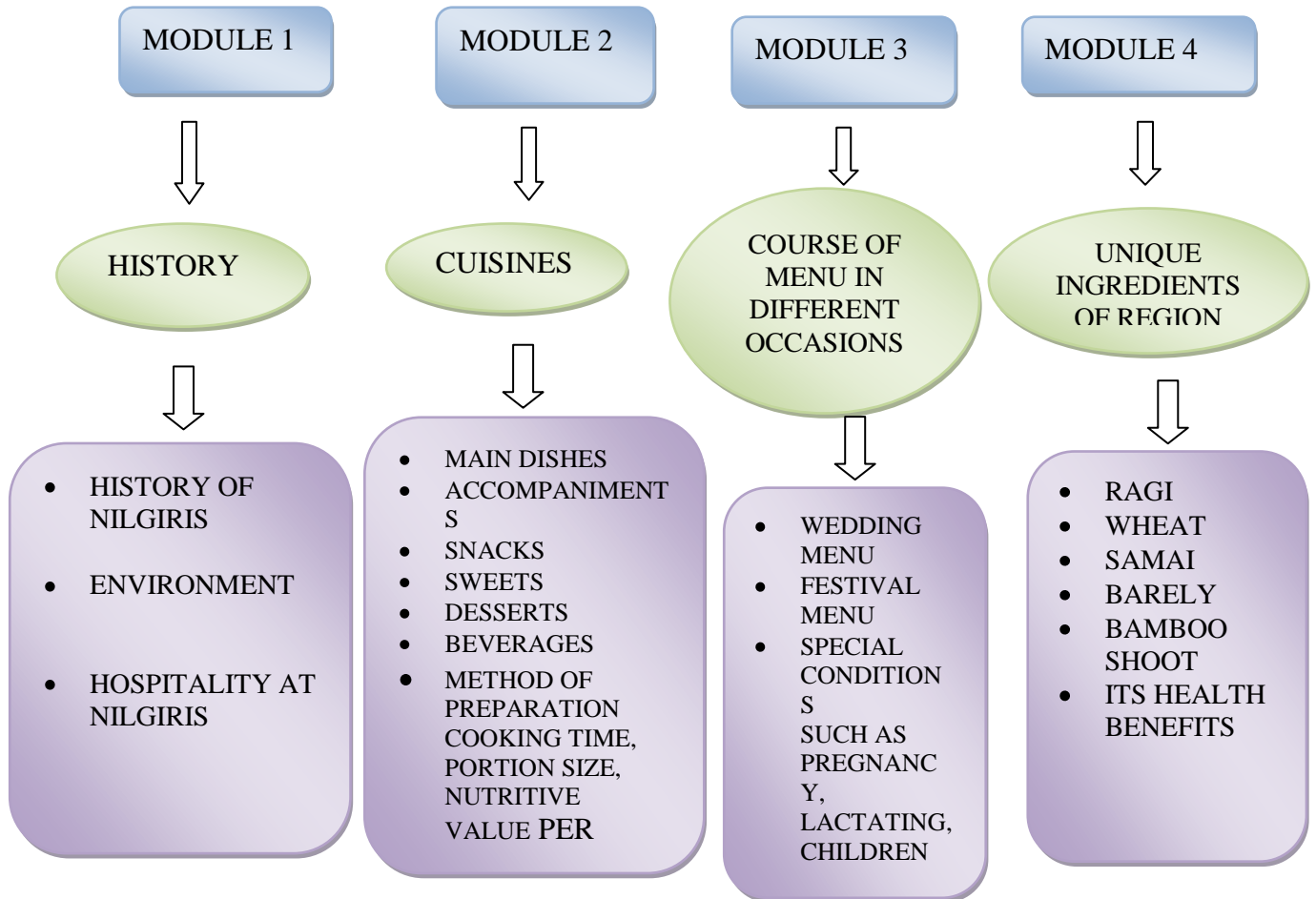
**Step3:**The modules were created with option from the admin panel. Modules namely module1,module2,module3,module4 were selected in admin panel.

**Step4:**Link option to module details.

**Step5:**Link option is posted and select the [www. avancezone .com](http://www.avancezone.com) site from the local host option. Then enter the address [http//.avancezone.com/Nilgiris cuisines](http://avancezone.com/Nilgiris%20cuisines). The details are saved in the new folder by using option and create new folder.

**Step6:**Thefolder is created in the xamp server and with the start server and the web page is hosted as **<http://avancezone.com/nilgiriscuisines/>**.

## CUISINES OF NILGIRIS



#### 4. RESULTS AND DISCUSSION

The results of the study titled “**Exploration of the Regional Cuisines of Nilgiris and Development of an Interactive Web Page**” is discussed under the following headings.

- A. Collection of recipes from the selected regions of Nilgiris**
- B. Quantitative food frequency pattern of the selected household women**
- C. Standardisation of the cuisines of Nilgiris region**
- D. Development of an interactive web page.**

##### **A. Collection of recipes from the selected region of Nilgiris:**

The recipes specific to the region of nilgiris elicited from one hundred household women and thirty chefs from hotels is given in Table 1

**Table 1**  
**Category of the recipes collected**  
**N=100**

<b>S.No</b>	<b>Category</b>	<b>Women N=62</b>	<b>Chefs N=38</b>
1.	Main dish	12	6
2.	Accompaniments	28	14
3.	Snacks	10	6
4.	Desserts	3	3
5.	Sweet	4	6
6.	Beverages	5	3

There are twelve main dishes, twenty eight accompaniments, ten snacks, three desserts, four sweets and five beverages were collected from household

women. The household women were more aware on the recipes prepared on festivals such as temple festivals (hathaehabha, marihabha,thevae habha) and special occasions such as wedding and during special conditions such as lactation, pregnancy

Six main dishes, thirteen accompaniments, six snacks, three desserts, six sweets, three beverages were collected from the chefs of the hotel and reported with the recipes of the region that were most preferred by the customers and suitable for service for commercial food service operations Main dishes such as vegetable biriyani, bella ku, somi ettu, Sweets such asathirasa, bhathursha, Thuppatheet, Desserts such as paramana, semiya payasa, Beverages such as ellae kapi, snacks such as parappuvadae and Accompaniments namely mushroom poriyal, broccoli poriyal, zucchini, oothukudi uthaka and avarae uthaka.

## **B. Quantitative food frequency pattern of food consumption of selected households**

- i. The quantitative food frequency pattern of selected household's womens are given in following tables.

Quantitative food frequency pattern of cereals and pulses given in  
Table2

**Table 2**  
**Quantitative food frequency pattern of cereals and pulses**

S.No	Food groups	Daily	Weekly	Fortnightly	Monthly Once	Occasionally	Quantity consumption per serving(g)
	<b>Cereals</b>						
1	Raw rice(Akki)*	60	40	-	-	-	75
2	Wheat(Gothumae)*	40	30	30	-	-	90
3	Ragi (Eragi)*	45	25	20	-	-	60
4	Samai(Batha)*	-	30	45	12	13	60
5	Wheatflour(Refined)* (maidamavu)	-	20	60	20	-	100
6	Semolina(Ravae)*	-	38	30	32	-	50
7	Vermicelli(Samiya)*	-	20	10	48	-	50
8	Barely (Kanjae)*	-	30	27	30	-	50
	<b>Pulses</b>						
1	Redgramdhal(Parappu)*	5	40	55	-	-	30
2	Blackgramdhal(Ulanthu)	-	30	70	-	-	20
3	Greengramdhal(Asuru)*	-	35	42	12	14	30
4	Horse gram dhal(Kolu)*	-	20	30	23	27	30
5	Peas dry(Kalae)*	-	65	31	4	-	30
6	Peasgreen(Acchaekalae)	-	65	20	9	-	100
7	Rajmah(Tharagini)*	-	56	38	6	-	30

\* Name of the food stuffs in regional language, badaga in brackets

Majority of the people consume rice and ragi as their staple food. The other cereals like Gothumae (Wheat), Batha (Samai), Kanjae (Barley) were used in preparation snacks, desserts and sweets. Consumption of peas green, red gram dhal fortnightly when compare to other pulses.

**ii. Quantitative food frequency pattern of vegetables**

The quantitative food frequency pattern of vegetables are detailed in Table3

**Table 3**

**Quantitative Food Frequency Pattern of Vegetables.**

S.No	Food stuffs	Daily	Weekly	Fortnightly	Monthly Once	Occasionally	Quantity consumption per serving (g)
	<b>Green leafy vegetables</b>						
1	Agathi (Kakae)	-	79	21	-	-	100
2	Amaranth (Keerae)	30	64	6	-	-	100
3	Mustard leaves (Kadugusoppu)	-	20	58	22	-	50
4	Radish leaves(Mulangisoppu)	-	-	30	45	25	100
5	Beetroot leaves(Beetroot soppu)	-	10	30	45	15	100
6	Fenugreek leaves (Maethaisoppu)	-	64	30	6	-	75
7	Pumpkin leaves(Kumbakaesoppu)	-	25	30	25	20	50
8	Cabbage (Gosu)	-	30	65	5	-	
	<b>Roots and tubers</b>						50
1	Beetroot	-	35	45	20	-	100
2	Carrot	-	65	35	-	-	50
3	Onion	100	-	-	-	-	25
4	Radish	-	35	65	-	-	50
5	Potato	25	65	10	-	-	
	<b>Other vegetables</b>						100
1	Beans(Thagaru)*	-	65	35	-	-	50
2	Double beans (Yallavarae)*	-	65	35	-	-	50
3	Kidney beans (Gujiavarae)*	-	45	25	30	-	50
4	Pumpkin(Kumbakae)*	-	27	30	43	-	100
5	Beans (Avarae)*	-	5	85	10	-	50

6	Zucchini	-	6	55	39	-	100
7	Broccoli	-	-	45	39	16	150
8	Bamboo shoot	-	-	-	-	100	50
9	Plantain stem(Bata thindu)*	-	30	15	45	10	50
10	Unripe jackfruits(Sakaekai)*	-	-	-	20	80	100
11	Mushroom	-	10	30	60	-	100
	<b>Fruits</b>						
1	Orange	10	40	50	-	-	75
2	Apple	-	-	58	42	-	100
3	Banana	65	5	-	20	-	75
4	Plums	-	-	10	75	15	50
5	Guava	-	-	10	20	70	75
6	Picches	-	-	-	25	75	50
7	Strawberry	-	-	-	-	100	10

\* Name of the food stuffs in regional language, badaga in brackets

Since most of households grew the vegetables in small patches of land called hola (kitchen garden), the vegetables like beans (avarae), potato, carrot, beetroot, cabbage and green leafy vegetables are harvested consumption among the households.

Amaranth leaves was consumed by the thirty percent daily. Seventy nine percent preferred agathi leaves weekly. Fifty eight percent consume mustard leaves fortnightly. Radish leaves and beetroot leaves were the region specific food consumed by forty five percent once in the month during seasons. Twenty percent consume pumpkin leaves occasionally.

Sixty five percent consumed beans variety like double beans, kidney beans weekly once. It was economically available. Zucchini was consumed by majority eighty five at fortnightly. All the households had habit of consumption of bamboo shoots during seasons.

Fruits like banana was consumed by 65 percent daily, as it is economically available and in grow in the kitchen garden. Orange was consumed by forty percent weekly as it was cultivated in the field and is easily available. Guava and picches were consumed once in fortnight. Plums and strawberry were consumed occasionally during the seasons.

### **iii. Quantitative food frequency patterns of fats and oils, spices and beverages**

The quantitative food frequency pattern of fats and oils, spices and beverages were detailed in Table 4

**Table 4**  
**Quantitative Food Frequency Pattern of Fats and Oils, Spices and Beverages**

S.No	Food stuff	Daily	Weekly	Fortnightly	Monthly once	Occasionally	Quantity consumption per serving (g)
<b>Fats and oils</b>							
1	Palm oil	20	5	-	5	70	15ml
2	Coconut oil	15	-	-	-	85	15ml
3	Sunflower oil	65	20	15	-	-	10ml
4	Vanaspathy	-	-	-	-	100	15ml
<b>Condiments and spices</b>							
1	Chillies	100	-	-	-	-	15g
2	Garlic	100	-	-	-	-	10g
3	Ginger	100	-	-	-	-	15g
<b>Beverages</b>							
1	Tea	80	-	-	-	20	100ml
2	Coffee	90	-	-	-	10	100ml

Sixty five percent of the household women used sunflower oil, twenty percent used palm oil and fifteen percent used coconut oils. Tea leaves and coffee bean were cultivated in the fields.

- i. Quantitative food frequency pattern of milk and fleshy foods were detailed in Table 5

**Table 5**  
**Quantitative Food Frequency Pattern of Milk and Fleshy Foods**

S.No	Food Stuff	Daily	Weekly	Fortnightly	Monthly Once	Occasional ly	Never	Quantity consumption per serving (g&ml)
<b>Milk</b>								
1	Cow's milk	80	-	-	-	-	-	150
2	Buffalo milk	20	-	-	-	-	-	150
3	Butter	30	10	50	-	-	10	5
4	Ghee	40	20	10	20	-	10	5
<b>Fleshy foods</b>								
1	Chicken	-	20	10	50	-	20	100
2	Fish	-	5	-	17	15	63	100
3	Mutton	-	-	-	-	30	70	75

Eighty percent of the women reported to consumed cow's milk. Twenty percent consumed buffalo's milk. Butter and ghee were prepared at home from churned curd and buttermilk and were used in preparation of sweets.

Among the house hold 20 percent of households were vegetarians. The majority of 50 percent households consumed chicken monthly once and thirty percent of consumed meat occasionally and fifteen percent of households consumed fish occasionally.

### C.Standardisation of the cuisines of Niligiri regions

- i. The standardisation details of main dish, accompaniments, snacks, sweets, beverages of Nilgiris is discussed in following Tables

The standardisation details of main dishes is given in Table 6

**Table 6**  
**Standardisation of main dishes**

**N=18**

S.No	Name of the Main dishes	Method of cooking	Cooking time in minutes	Frequency of use/occasion used
1.	Allu ku	Boiling	20	Usual
2	Banae ku	Boiling	20	Usual
3	Bathiakki ettu	Boiling	20	Lactating
4	Beer kanjae ettu	Boiling	20	Pregnancy
5	Ballaettu	Boiling	15	Pregnancy
6	Bella dhoti	Shallow frying	15	Pregnancy
7	Bella kanji	Boiling	20	Regional festival
8	Eragi dhoti	Shallow frying	15	Regional festival
9	Eragi ettu	Boiling	20	Usual
10	Gothumae ettu	Boiling	20	Usual
11	Kanjae ettu	Boiling	20	Usual
12	Keerae ettu	Dry roasting	20	Usual
13	Kucchalaki ku	Boiling	15	Lactating mother
14	Mazikae ettu	Boiling	20	Pregnancy
15	Paraeku	Boiling	20	Usual
16	Poothitu	Shallow frying	15	Pregnancy
17	Somi ettu	Boiling	20	Regional
18	Vegetablebiriyani	Boiling	20	Wedding

The main dishes were prepared by using ragi, wheat, samai, and rice and common methods employed was boiling. The equipments "ettukolu" is used for preparing recipes gothumae ettu ,eragi ettu,somi ettu, mazikae ettu, bathiakki ettu , a main dish( fig-2). During the festivals preparation of belladhoti, poothitu, by using refined wheat flour with shallow fat frying. Dry roasting method was used for preparation of keerae ettu that used amaranth seeds. Vegetable Biryani, bellaku,somiettu were the Popular dishes prepared and served at hotels.



**Figure1**

**Soild fuel- fire wood used for cooking**



**Ettu kolu used for preparing for cooking main dishes**

**Figure -2**



**Figure -3**

### Equipment used for preparing poothitu

**ii. Standardisation details of accompaniments are given in following tables**

The standardisation details of accompaniments with vegetables as main ingredient is given in Table 6

**Table 7**

### Standardisation of accompaniments-vegetables

N=17

S.No	Name of the Accompaniments-	Method of cooking	Cooking time in minutes	Frequency of use/ occasion used
1	Bayathinduuthaka	Boiling	30	Seasonally
2	Benguvaemaseeru	Smoking &Boiling	20	Usual
3	Benguvaesandakae	Smoking &Boiling	20	Usual
4	Carrot uthaka	Boiling	20	Seasonally
5	Dhodavaraeuyhaka	Boiling	30	Seasonally
6	Gosuuthaka	Boiling	20	Seasonally
7	Gujiavaraeuthaka	Boiling	20	Regional festival
8	Kalae uthaka	Boiling	20	Seasonally
9	Koi uthaka	Boiling	30	Festival
10	Ootugudi	Boiling	20	Seasonally
11	Paeraemaseeru	Smoking&Boiling	20	Usual
12	Payasa	Boiling	20	Festival
13	Thaguruuthaka	Boiling	20	Seasonally
14	Tharaginiuthaka	Roasting &Boiling	20	Funeral
15	Thotathombasandakae	Smoking& Boiling	20	Seasonally
16	Thumbiavaraeuthaka	Boiling	20	Seasonally
17	Yallavaraeuthaka	Boiling	30	Regional festival



**Thumbiavaraeuthaka(Double Beans)**



**Yallavaraeuthaka(French Beans)**



**Dhodhavae uthaka**

**Common variety beans available in the region**

**Figures 4**

Consumption of roots and tubers such as carrot uthaka(carrot kolambu), gasuuthaka(cabbage kolambu)and beans variety such as yallavare, thumbiavarae,gujiavareavarae,dhadavarae were consumed in the form of gravies in frequently.

**iii. Standardisation of accompaniments –Green leafy vegetables are given in the following tables**

The standardisation details of accompaniments with green leafy vegetables is given in Table 8

**Table 8**  
**Standardisation of accompaniments –green leafy vegetables**

**N=14**

<b>S.No</b>	<b>Name of the recipes Accompaniments</b>	<b>Method of cooking</b>	<b>Cooking time in minutes</b>	<b>Frequency of use/ occasion used</b>
1	Annikerae	Sautéing	20	Seasonally
2	Beetroot soppu	Boiling &smashing	20	Lactating mother
3	Benguvaesoppu	Boiling &smashing	20	Seasonally
4	Endibachisoppu	Boiling &smashing	20	Pregnancy
5	Gosuporiyal	Sautéing	20	Wedding
6	Kadagusoppu	Sautéing	20	Usually
7	Kakaesoppu	Sautéing	20	Frequently
8	Keerae soppu	Sautéing	20	Frequently
9	Kilaegosuporiyal	Sautéing	20	Wedding
10	Kumbakaesooopu	Sautéing	20	Frequently
11	Maethaesoppu	Sautéing	20	Frequently
12	Mulangisoppu	Boiling &smashing	20	Pregnancy
13	Thavaekeerae	Sautéing	20	Lactating mother
14	Violet gosu	Sautéing	20	Wedding

Use of mustard leaves, beetroot leaves, radish leaves, garlic leaves, pumpkin leaves and also they consumed amaranth leaves in various form was used as ingredients for accompaniments. Sautéing, boiling and smashing were common method of cooking used in the preparation of accompaniments. Taste was an important dimension of the traditional food product: "tradition is tasteful" (Singh, 2006)

The standardisation details of accompaniments- poriyal is given in Table 9

**Table 9**

**Standardisation of accompaniments - poriyal**

**N=15**

<b>S.No</b>	<b>Name of the recipes Accompaniments</b>	<b>Method of cooking</b>	<b>Cooking time In minutes</b>	<b>Frequency of use/ occasion used</b>
1	Bathal	Sun drying & deep frying	5	Seasonally
2	Bay thinduporiyal	Sautéing	20	Seasonally
3	Broccoli	Sautéing	20	Seasonally
4	Carrot poriyal	Sautéing	20	Seasonally
5	Cauliflower	Sautéing	20	Seasonally
6	Dhodhavaraporiyal	Sautéing	15	Seasonally
7	Gasuporiyal	Boiling & sautéing	15	Frequently
8	Kalaeporiyal	Sautéing	20	Frequently
9	Karabathal	Sautéing	15	Seasonally
10	Kumbakae	Sautéing	15	Festival
11	Mushroom	Sautéing	20	Seasonally
12	Sakae kaiporiyal	Sautéing	20	Seasonally
13	Sundal	Boiling & Sautéing	20	Festival
14	Suttagasuporiyal	Smoking	20	Usually
15	Thagaru porriyal	Sautéing	20	Seasonally

The cooking time of the recipes varied from 5 to 20 minutes. The accompaniments used vegetables such as cabbage, plantain stem, sundal, pumpkin, mushroom, beans of this category was sauted with pulses. During festival Kumbakae (Pumpkin) porriyal was prepared by sautéing and was served as a side dish. Consumption of unripe jack fruits, plantain stem, broccoli for their accompaniments was observed among the people.

#### iv. Standardisation of sweets

The standardisation details of sweets is given in Table 10

**Table 10**  
**Standardisation of sweets**

N=9

S.No	Name of the sweets	Method of cooking	Cooking time in minutes	Frequency of use/ occasion used
1	Athirasa	Deep fat frying	20	Festival, wedding
2	Bathurasa	Deep fat frying	20	Festival, wedding
3	Diamond cut	Deep fat frying	20	Festival, wedding
4	Kadamittu	Steaming	120	Pregnancy
5	Kaleetu	Shallow fat frying	20	Festival
6	Naevathi	Mixing	5	Regional Festival
7	Rava laddu	Dry roasting	20	Festival, wedding
8	Sattae uppitu	Shallow frying	20	Festival, wedding
9	Thuppatheet	Deep fat frying	30	Festival, wedding

During the wedding and festivals preparations of sweets such as diamond cut, ravaladdu, bathurasa, sattauppitu, athirasa and thuppatheet. Preparation of Thuppatheet was an important event in wedding function. On the previous day of wedding all the women in the village join together and prepare the Thuppatheet.

These Sweets are prepared by deep fat frying. Naevathi was prepared by mixing nine ingredients such as milk, banana, jaggery, puffed rice, apple,

pomegranate, roasted bengal gram, sugar crystal and dates it was prepared in the regional festival marihabha .Traditional food products were also defined as strongly seasonal and were consumed at special occasions. (Bender, 1989).

v. **Standardisation of snacks**

The standardisation details of snacks is given in Table11

**Table 11**  
**Standardisation of snacks**

**N=15**

S.No	Name of the snacks	Method of cooking	Cooking time in minutes	Frequency of use/ occasion used
1	Avalu	Soaking	20	Festival
2	Bathiki puttu	Dry roasting	20	Rainy season
3	Gothumae	Dry roasting	20	Rainy season
4	kanjika	Dry roasting	20	Rainy season
5	Gothumae puttu	Dry roasting	20	Rainy season
6	Kanjae puttu	Dry roasting	20	Rainy season
7	Kanjika	Dry roasting	20	Rainy season
8	Keerae puttu	Dry roasting	20	Rainy season
9	Kucchalaki puttu	Shallow frying	20	Festival
10	Kulapaniyara	Soaking	20	Festival
11	Muruku	Boiling	20	Lactating mother
12	Orutha akki	Boiling	20	Lactating mother
13	Orutha keerae	Deep fat frying	15	Wedding
14	Pakoda	Deep fat frying	20	Wedding
15	Parappuvadae	Deep fat frying	15	Wedding

Orutha keerae ,Orutha akki, Gothumae kanjika, Kanjika, Keerae puttuGothumae puttu, Kanjae puttu were prepared by dry roasting method and

includes the ingredients like amaranth seeds, barley, whole wheat and rice. Pakoda, muruku, parappuvadae were prepared for wedding events by deep fat frying. Using the millet samai snacks such as kucchalaki puttu, bathiki puttu are prepared for lactating mother by boiling method. Avalu and Kulapaniyara were prepared during festivals times.

Whole wheat, amaranth seeds and barely are the main ingredients such as kanjika, Orutha keerae, keerae puttu, akki puttu, kanjae puttu, gothumae puttu were prepared.

**Standardization of desserts and beverages are given in following tables**

The standardisation details of desserts and beverages is given in Table12

**Table 12**  
**Standardisation of desserts and beverages**

**N=10**

<b>S.No</b>	<b>Name of the Desserts and Beverages</b>	<b>Method of cooking</b>	<b>Cooking time in minutes</b>	<b>Frequency of use/ occasion used</b>
	<b>Desserts</b>			
1	Eragi kanji	Boiling	20	Frequently
2	Paramana	Boiling	20	Regional Festival
3	Gothumae kanji	Boiling	20	Frequently
4	Kanjae kanji	Boiling	20	Lactating mother
5	Semiya Payasa	Boiling	20	Marriage
6	Aki paramana	Boiling	20	Frequently
7	Kucchalaki kanji	Boiling	20	Lactating mother
	<b>Beverages</b>			
8	Thankae coffee	Boiling	15	Festival
9	Bella kapi	Brewing	15	Festival
10	Ellae kapi	Boiling &stewing	15	-

Eragi kanji, gothumae kanji, Aki paramana were usually prepared by the boiling method. Paramana was the popular dessert prepared using semolina was served during festivals and bajan. Kanjae kanji, Kucchalaki kanji were specially prepared for lactating mothers using the millets. Semiya Payasa was prepared in the events of wedding and festivals.

Thankae coffee (coffee with coconut) and bella coffee (jaggery coffee) was the popular beverages prepared in the regional festival hatta habha. The Ellaekapi was prepared using the buds of tea leaves and stewed.

**Sensory evaluation of the recipes:**

The calculated mean scores of the recipes on a five point scale is discussed in the following pages.

The mean score for the sensory evaluation of the main dishes is given in Table13

**Table 13**  
**Mean score for the sensory evaluation of the main dishes**  
**N=18**

S.No	Name of the main dishes	Mean score
1.	Allu ku	17
2.	Banae ku	17.5
3.	Bathiakki ettu	17.4
4.	Beer kanjae ettu	17.5
5.	Bella dhoti	17.5
6.	Bella kanji	16.5
7.	Eragi dhoti	16.5
8.	Eragi ettu	17
9.	Gothumae ettu	16.5
10.	Kanjae ettu	18.5
11.	Keerae ettu	17.5
12.	Kucchalaki ku	18.5
13.	Mazikae ettu	15.5
15	Paraeku	17.5
16	Poothitu	18
17	Somi ettu	16.4
18	Vegetable briyani	17.5

The mean score of Poothitu and Kucchalaki ku were high with 18.5. The lowest score 15.5, Mazikae ettu was prepared by adding buttermilk. The medium mean score of 17.5 for Eragi ettu, Bathiakki ettu, Banaeku, belladhoti, keerae ettu and vegetable briyani.

Positive acceptance scores for quality innovations match with growing consumer's interest for healthy and safe food (Pieniaket *al.*,2009).

The high acceptance rates were attributed to a label that guarantees the origin. This corresponds with earlier findings (Caporaleet *al.*, 2001).

Both studies pointed on the positive quality expectations that were created by informing consumers about the origin of a product, with consumers expressing higher expectations for the products from own region.

**Table 14**

**Mean score for the sensory evaluation of the accompaniments - vegetables**

**N=16**

S.No	Name of the accompaniments	Mean score
1	Bayathindu uthaka	15.5
2	Benguvae maseeru	17.6
3	Benguvae sandakae	16.8
4	Carrot uthaka	15.6
5	Gosu uthaka	15.4
6	Gujiavarae uthaka	18.4
7	Kalae uthaka	18.5
8	Koi uthaka	18.5
9	Ootugudi	17.5
10	Paerae maseeru	16.8
11	Payasa	17.6
12	Thaguru uthaka	17.6
13	Tharagini uthaka	17.5
14	Thotathombasandakae	14.6
15	Thumbiavarae uthaka	18.5
16	Yallavarae uthaka	18.5

Beans variety namely yallavarae uthaka, gujiavarae uthaka, thumbiavarae uthaka and koi uthaka, parae maseeru mean value were 18.5. Thotathomba sandakae mean value was 14.4, it was prepared using tree tomato and scored less because of the sourness. The score ranged from the 15 to 18 indicating a fair acceptability of the recipes.

**Table 15**  
**Mean score for the sensory evaluation of accompaniments**  
**Green leafy vegetables**

**N=15**

S.No	Name of the accompaniments	Mean score
1	Annikeerae	17.5
2	Beetroot soppu	14.7
3	Bella benguvaesoppu	14.5
4	Endibachisoppu	18.7
5	Gosuporriyal	18.5
6	Kadagusoppu	14.5
7	Kakaesoppu	18.5
8	Keerae soppu	17.5
9	Kilaegosuporriyal	16.5
10	Kumbakaesooopu	16.5
11	Maethaesoppu	14.7
12	Mulangisoppu	18.5
13	Thavaekeerae	18.5
14	Violet gosu	17.5

Maethaesoppu and kadagu soppu get less mean value of 14.5 because of its bitter taste. Beetroot soppu and endibacchi soppu had scores 19 and 18.7 respectively.

**Table 16**

**Mean score for the sensory evaluation of the accompaniments - poriyal**

<b>S.No</b>	<b>Name of the accompaniments</b>	<b>Mean score</b>
1	Bay thinduporiyal	16.6
2	Broccoli	15.7
3	Carrot porriyal	18.5
4	Cauliflower	15.6
5	Dhodhavaraporiyal	15.5
6	Gasuporiyal	18.5
7	Kalaeporiyal	17.5
8	Kumbakae	19.5
9	Mushroom	18.5
10	Sakae kaiporiyal	16.5
11	Sundal	17.5
12	Suttagasuporiyal	15.5
13	Thagaruporiyal	15.5
14	Bathal	18.6
15	Karabathal	16.5

The scores for the accompaniments in the poriyal form were good and had acceptable scores ranging from 15.5 to 19.5.

**Table 17**  
**Mean score for the sensory evaluation of the sweets**  
**N=14**

S.No	Name of the sweets	Mean score
1	Athirasa	18.5
2	Bathurasa	18.5
3	Diamond cut	17.5
4	Kadamittu	14.5
5	Kaleetu	15.4
6	Naevathi	16.5
7	Rava laddu	17.5
8	Sattae uppitu	18.5
9	Thuppateet	19.5

The sweet thuppateet had the score had 19.5,. Kadamittu scored 14.5 as the method of cooking was steaming and became hard in texture, the scores of other sweets ranged from 15.5.

**Table 18**

**Mean score for the sensory evaluation of the snacks**

**N=14**

<b>S.No</b>	<b>Name of the snacks</b>	<b>Mean score</b>
1	Avalu	16.5
2	Bathiki puttu	16.5
3	Gothumae kanjika	15.5
4	Gothumae puttu	16
5	Kanjae puttu	15.5
6	Kanjika	15.5
7	Keerae puttu	15
8	Kucchalaki puttu	17.5
9	Kulapaniyara	17.5
10	Muruku	18.5
11	Orutha akki	14.5
12	Orutha keerae	15.5
13	Pakoda	18.5
14	Parappuvadae	18

The scores for the sweets were good and had acceptable scores ranging from 15.5 to 18.5.

**Table 19**  
**Mean score for the sensory evaluation of the Desserts and Beverages**  
**N=10**

S.no	Name of the Desserts and Beverages	Mean score
	<b>Desserts</b>	
1	Aki paramana	16.5
2	Eragi kanji	15.5
3	Gothumae kanji	16.5
4	Kanjae kanji	16
5	Kucchalaki kanji	16.5
6	Paramana	17.5
7	Payasa	17.5
	<b>Beverages</b>	
8	Bella kapi	17.5
9	Ellae kapi	18.4
10	Thankae coffee	17

Desserts were prepared by using barely, wheat, ragi, semolina and vermicelli. The score was good and had acceptable scores ranging from 15.5 to 18.4. Beverages prepared by using tea buds (ellae kapi) had a high score of 18.4 and had acceptable scores ranging from 17 to 17.5.

#### **D.Development of an interactive web page**

The cuisines of Nilgiris hosted in the web page <http://avancezone.com/nilgiriscuisines/> consisted of the history of the regions as Module 1, Recipes as Module 2, Menu card as Module 3 and Special Ingredients as Module 4.

The screen shot of the modules and recipes in each category is given in following pages

## 5. Summary and Conclusion

Tradition is a cultural heritage that is passed down from generation to generation, and refers to their knowledge, crafts, rituals, moral, code and customs. The traditional food is a way of preparing food in families in the past up until the mid twentieth century and the indigenous knowledge erodes rapidly thereafter. The loss of this knowledge negatively affects the lives and health of traditionally living communities; hence a drive to conserve indigenous knowledge becomes vital. Considering this, the cuisine of Nilgiris was explored as to sustain the richness of the cuisine among the population. Hence the study titled “**Exploration of the Regional Cuisines of Nilgiris and Development of an Interactive Web Page**”, was taken with the objective to explore traditional foods standardise the recipes and develop of interactive web page for access by the population.

The methodology adopted for the study was to elicit details from one hundred household women and chefs of three hotels from Kilkundha and Mulligoor village in Nilgiris region. The quantitative food frequency pattern of the women was studied in order to understand the consumption of food specific the Nilgiris region with its quantity and frequency. Details of cuisines were collected using a questionnaire and were then standardised. The standardised details of the recipes are hosted in the web page “<http://avancezone.com/nilgiriscuisines/> for access.

### **The salient findings of the study are summarized as follows**

- A total of one hundred recipes were collected with sixty three from household women and thirty seven recipes from the chef of the hotel recipes included eighteen main dishes, forty one accompaniments, sixteen snacks, ten sweets, fourteen desserts and seven beverages.
- The quantitative food frequency pattern of selected household women was studied in order showed that the population had cereal such as rice,

ragi, whole wheat (samba gothumae), barely (kanjae) and millets samai were used in the most of the preparations.

- The main dishes were prepared using boiling as a common method of cooking. The main dish was served using the equipment kacchubatlu, a chromium plated dish. They consumed peas green, red gram dhal, quite frequently when compared to other pulses.
- The people the Nilgiris variety of beans namely gujiavarae(kidney beans), yallavarae (broad beans) , thumabi avaraе(double beans) once a week when compared to other vegetables such as pumpkin, broccoli, plantain stem and mushroom. The accompaniments (kolambu) were prepared commonly using the beans cultivated in the region.
- Other vegetables like plantain stem (bayathindu), unripe jackfruit (sakaekai), treetomato(thombaannu),zucchini, broccoli and bamboo shoots (ootakudi)were used as a main ingredients for accompaniments (kolambu) in seasonally.
- Green leafy vegetables such as amaranth leaves, agathi leaves, beetroot leaves, radish leaves, mustard leaves, pumpkin leaves, onion leaves, cabbage and purplecabbagewere consumed by all the households as they were cultivated in the kitchen gardens.
- Consumption of roots and tubers was more frequent vegetables such as carrot, beetroot and potato. As they were economical and for easy availability.
- Eighty percent of the women reported to consume cow's milk. Twenty percent consumed buffalo milk, milk product such as butterand ghee were prepared at home from churned curd and butter milk and were used in preparation of sweets.
- Eighty percent of household women consumed flesh foods such as chicken. Twenty percent of the women were vegetarians. Also as a custom of the region, the non vegetarian foods were not cooked during festival and weddings occasions.

- Vegetable Biryani, Bellaku, Somiettu were popular main dishes. Thumbiavarae, gujiavarae are popular accompaniments, athirasa, bhathurusha were popular sweets. Broccoli, Purple Cabbage were popular ingredients in accompaniments prepared and served at hotels.
- Thuppateet was a famous sweet prepared in wedding by deep fat frying method. Preparation of thuppateet is considered as an important event in wedding. Using ingredients such as roasted Bengal gram, raw rice, Jaggery and cardamom.
- Highest mean scores for sensory evaluation of main dishes was kanjae ettu and for kucchalakiettu with 18.5. The maximum scores for accompaniments was for gujiavaraeuthaka, yallavaraeuthaka, thumbiavaraeuthaka and kalae uthaka. Sweets namely thuppateet had a high score of 19.5 indicating good acceptability for attributes such as appearance, texture, flavor and taste.
- Beverages ellae kapi had a score of 18.5. Desserts namely paramana made with semolina and Payasa made with vermicelli had a high acceptability score of 17.5. In beverages the recipe ellae kapi, a hot recipe had score of 18.4
- Web page with the cuisines of Nilgiris was hosted in <http://avancezone.com/niligiriscuisines/>. Positive comments were received from viewers and internet surfers.

## **Conclusion**

Regional cuisines are the social and cultural practices of people around world. Indigenous food system plays a great significance in the lives of the communities in the Nilgiris region. The present study highlights the importance and the goodness of regional cuisines in specific to Nilgiris. The standardised recipes help to integrate health and good cooking practices among the house hold. An effort to bridge technological access as a web page would help the population to enrich the eating pattern and sustain healthy options through the cuisines that are specific to the region.

## BIBLIOGRAPHY

- Albala K. Southern Europe. In: Kiple KF, Ornelas KC, eds. The Cambridge world history of food. New York: Cambridge University press 2000.
- Andersen, E.S. (1994). The evolution of credence goods: a transaction approach to product specification & quality control. MAPP working paper no 21. Aarhus: The Aarhus school of business.
- Angela Tregear, Sharron Kuznesof, Andrew Moxey, (1998). Policy initiatives for regional foods; some insights from consumer research. Vol 23, issues, oct 1998, Page – 384.
- Bender, A.E. (1989). What is nature? Food chemistry, 33(1), 43-51.
- Bertozi, L. (1998). Tipicidad alimentaria y dieta mediterránea. In A. Medina, F. Medina, & G. Colesanti (eds), El color de la alimentación mediterránea, Elementos Sensoriales y Culturales de la nutrición (Pp 15-41). Barcelona; Icaria.
- Bonne, K. Verbeke, W. (2006). Muslim consumer's attitude towards meat consumption in Belgium; insights from a means – end chain approach, Anthropology of food, 5, 1- 24.
- Camp, C. (2009). Food way in Brunvard. In T. Francis American folklore an encyclopedia
- Cayot, N. (2007). Sensory quality of traditional foods. Food chemistry, 101 (!, 154 - 162.
- Cordain L, Eaton SB, Sebastian A, Mann N, Lindeberg S, Watkins BA, O'Keefe JH, Brand-miller J. origins implications for the 21 st century. American Journals of Clin Nutr 2005; 81: 341-354.
- Dalda cook book, 2 nd edition. 1942, 11855. Page No-43.
- Darbey, M.; Karni, E. (2004). Free competitive & the optimal amount of fraud. Journal of law and economics, 16, 67-88
- Driver, C. (2007). The British at table (2000 -2007) Chatto and Windus. The Hogarth pres. London.
- Eaton SB, Konner, M. Paleolithic nutrition. A consideration of its nature and current implication. 1985 N. Engl. J Med 1985, 312 : 283 – 289.
- Ethnic food sensory quality of traditional foods Nathalie Cayot, 2007. 445 – 453.

- EU. (2006). Council Regulation (EC) No 50a/2006 of 20 march 2006 an agricultural products and food stuffs as traditional specialities guaranteed Official Journal of the European Union L 1 3LT.
- Euro FIR,(2007).FOOD-CT-2005-513944, Eu frame work food quality and safety programme. Web site <http://www.eurofir.net>. visited june 2007.
- EuroFIR (2007). Food – CT – 2005- 513944. EU 6<sup>th</sup> framework food quality and safety programme. Website: <http://WWW.eurofir.net>. Visited June 2007.
- Fajans.J.(2006) Regional food and the tourist imagination in brazil, *Appetite*, (47 (3), 389.
- Fiddes, N. (1992). *Meat; A natural symbol*. London/New York: Routledge.
- Flacke –Neudorfer, Corinne 2008 Actors or victims / Actor oriented perspectives on a new form of tourism. In *tourism Development.Growths, Myths, and inequalities*. Peter Burns and Marina Novelli, eds, Pp-239-258 walling Ford ; CAB International
- Flyman ,M.V:&Afolayan,A.J.(2006). The suitable of wild vegetables for alleviating human dietary deficiencies . *South Africa journals of botany*,72,492-497.
- Forum, T.N.(2009). Reprt on the size and distributionof the world’s Muslim population retrieved.
- Guerrero, L, Guardia. M.D, Xicola.,Verbeke, W., Vanhonacker, F. ZakowskaBiemans, S. (2009). Consumer – driven definition of traditional food products and innovation in traditional foods. *Qualitative cross – Cultural Study. Appetite*, 52(2), 345-354.
- Guerrero.L.colomer,y.guardia,M.D.xicola,J.&clotet,r.(2000).consumer attituded towards store brand , food quality and preference ,11(5),387-395).
- Harris, Marvin. *The cultural ecology of India’s Sacred cattle*; in *current Anthropology* Vol.F.no.1 (Feb 1966).Pp.51-66.
- Huffman, W:Rousen,M.Shogren,J:&Tengene ,A(2002).Who do consumer trust for information.
- Hunter Monica (1979). *Reaction to conquest effects of contact with Europeans on the pondo of South Africa*. Cope Town : David Philip.
- Hussaini, M.M.(1993). Halal Haram lists. Why they do not work ?Accessed August 2004: <http://www.soundvision.com/info/halalhealthy/hala.list.asp>.

- Jordana, J. (2000). Traditional food: Challenges facing the ceuropean food industry. *Food Research International*, 33 (3-4), 147 – 152.
- Keller, G.B.Mndiga, H... and Maass, B.W. (2004).Production and consumption issues of traditional vegetables in Tanzania from the farmer’s point of view. Seminar presented at deutschertropentag, 5-7 october 2004, berlin, germany. Book of Abstracts, P.288.
- Kim, H., yu, K., Yoon, J., lee., Choi, Y., \$ choi, J (20050. Walking in the world looking culture (Pp- 33-55, seoul: Daega.
- Kim, K.S, Kim, M.J., Ahn, S.J., Lee, S.Y., \$ Han, K.S (1999) Food and food culture. Soul: Kyomoonsa.
- Koo, N.S., kwon, S,J, lee, K.A., < Y, S.Y. (2008). Food and Culture n the world (Pp, 1-11).Raju: Kyomoonsa
- Koo, S.J & Kim, H.S (2005).In cultural foods in the world (PP-1-48, 74 - 75).Paju ; K yomoonsa.
- Krueger, R.A. (1998) Focus groups : a practical guide for applied research. Newbury park, CA: Sage publication.
- Kruger, E.P (2003). Focus group’s practical work for applied research .Newbury park CA: sage publication.
- Kuhne, B., Gellynnck,X. (2009). Food chain networks as a leverage to innovation capacity in 3rd international European forum on system dynamics and innovation in food networks, Innsbruck –IgIs, Austria; University of Bonn, KB Press.
- Kwon, S. J. (30, April 2005). Meat and food culture in the East. Proceeding of Korean Society of the East Asian Society of Dietary Life (pp. 1–20). Seoul, Korea.
- Li D, zhu B, Maclennan R and Lupien J (guesteds (2004). Joint ZAST/IUNS/WLTO Worksho on current patterns and emerging challenges of nutrition cuisine and health”, 14-17 october 2000, hanghou, china. Asia pacific Journals of clinic and Nutrition; 13:121 -183.
- Lwoga, E.T. Ngulube, P. and Still well managing indigenous knowledge for sustainable agricultural development in developing countries knowledge

management approaches in the social context. The international information and library review, 42 (3), 174 – 185.

Machennan, R, Meyer. F. Food and Mortality in France Lancet 1977; 2: 133.

Mark L. Wahlqvist, MD (Adelaido), MD (Uppsala) FRACP, FAFPHM, FTSE and Meei-shyuan Lee, 2007, Regional Food culture and development, Asia

Marrow J.L.Hansen,M.H.&person ,A.W(2004).The cognitive and affective antecedents of general trust within cooperative organization . journals of managerial issues 16(1),48-65.

Marthi, B. (1999). Food Safety challenges in developing countries. The Indian situation food control 10 (4-5), 243 – 245.

Mathers CD, Sadana R, Salomon JA, Murray L, Lopez AD. Healthy life expectancy in 191 countries, 1999. Lancet 2001; 357: 1685 – 1691.

Mccann.D.(2004). Consumer trends in food safety, economics competitiveness Alberta agriculture food and Rural Development. Accessed 13.09.08.

Messer E.In; Peito GH, Peltó PJ, Messer E, eds, Research Methods in Nutritional Anthropology. New York : UNU press. 1989.

Minister agricultura (1999). Decreto legislativo 30 april 1998no173). Decreto legislativo 8 september 1999 no350

Modi, M. Modi, A.T & Hendricks, S. (2006).Potential role of wild vegetables in household food security. A preliminary case study in Kwazulu – Natal, South Africa, African journal of food, Agriculture Nutrition and Development, 6 (2)1-13

Montanari, M.(2007). The culture of food, Oxford; Blackwell.

Odhav, B. Beekrum, S., Akula, U.S. & Baijnath, H. (2007). Preliminary assessment of nutritional value of traditional in Kwazulu Natal, South Africa, Journal of Food composition and Analysis, (2015). 430 – 435.

Powell, J, (2007). Immigration.Newyork.Thomas woll.

Regenstein, J.M., Chaudry, M.M., and Regenstein, C.E. (2003). The Kosher and halal food laws comprehensive Reviews in food science and food safety 2, 111-127.

Resurreccion, A.V.A. (1998). Consumer sensory testing for product development Gaitherburg, M.D : Aspen publishers Inc.

Robert maclenhan FRACP and AIZHEN Zhang MD (2004), nutrition implications – global asia pacific journals of clinical nutrition. (2004); 131 – 135.

- Shava, S. (2000). The use of indigenous plants as food by rural community in the Eastern cape. An educational exploration unpublished master's thesis, Rhodes university, Grahams town, South Africa.
- Simoons, F.J. (1994). Eat not this flesh, Food avoidances from prehistory to the present. Madison/London: The University Wisconsin press.
- Sudershan, R.V. Rav, G.M.S. Rao, P., Rao, M.V.V., Polasa, K. (2008). Knowledge and practices of food safety regulators in southern India, Nutrition & food science, 38 (2), 110 – 120.
- Tania Delgado, Lia Reyes and Ana Linda Monroy BOKANTU : RE – contextualizing traditional recipes of the Caribbean coast of Colombia (2007).
- Tannahill, R. (1989). Food in history New York; crown publisher.
- Telfer, David J: and Richard sharpely 2008. Tourism and development in the developing world. London: Routledge.
- Trichopoulou, A, Vasilopoulou, E., Georga, K, Soukara, S., Dilis, V. (2006). Traditional foods: Why and how to sustain them. Trends in food science and technology, 17, 498 -504.
- Trichopoulou, A., Soukara, S., Vasilopoulou, E.(2007). Traditional foods; a science and society perspective. Trends in foods: a science & Technology, 18 (8), 420 – 427.
- Turner & Berkers 2006. Turner, V.J and Berkes.F ; 2006-coming to understand; developing conservation through incremental learning in the pacific Northwest human ecology, 34, M 95-513.
- UNESCO (2007). Intangible Heritage 2003 Convention, 2011, from <http://www.unesco.org/culture/ich/index.php?lg=en&pg=00022> Hartz.
- Verbeke.W.&Lopez,G.P(2005). Ethnic food attitudes and behavior among Belgians&Hispanics living in Belgium . British food journals ,107(10-11),823-840.
- Vorster.I.H.J.Jansen van Resburg ,W.vanzji:J.J.B&venter,L.S.(2007). Re-creating awareness of traditional leafy vegetables in communities .African journals of food agriculture nutrition and development.
- Vanhonacker, F., Verbeke, W., Guerrero, L., Claret, A., Contel, M., Scalvedi, L., et al.

(2010). How European consumers define the concept of traditional food: Evidence from a survey in six countries. *Agribusiness*, 26, 453–476.

Wahlqvist M.L. chronic disease prevention : A life cycle approach which takes account of the environmental impact and opportunities of food, nutrition and public health policies – the rationale for an eco-nutritional disease nomenclature *Asia pac J clin Nutr* 2002; 11 : 8759 – 8762.

Wahlqvist M.L. Towards a new generation of international nutrition science and scientist the importance of Africa and its capacity *J Nutr* 2006; 136: 1048 – 1049.

World Health organization (Member : ML Wahlquist) preparation and use of food – based dietary guidelines report of a joint FAO/WHO consultation (1995: Nicosia, Cyprus). World health organization, Geneva 1998.

Cuisines of Nilgiris | Recipes | Cuisines of Nilgi | Menu Card | Cuisines of N | Contact | Cuisines of Nilgi | New Tab

avancezone.com/badagarecipes/contact/

Downloads | New folder | text.html | Google | utility pages | moodle

# CUISINES OF NILGIRIS

HISTORY // RECIPES // MENU CARD // CONTACT

## Contact


For more details please contact

**Thilagamani Subramanian**  
**Krishna Veni**  
Email krishnaveni11pd13@gmail.com

Your Name (required)

Your Email (required)

Subject



RECENT POSTS

- Food1
- Food1
- Food1
- special occasions-food
- wedding-Food

RECENT COMMENTS

amila on ELLAE KAPI

ARCHIVES

15:17 30-04-2013

ERAGI KANJI | Cuisines of Nilgiris - Mozilla Firefox (Private Browsing)

File Edit View History Bookmarks Tools Help

Zimbra Web Client Sign In x Inbox - vhaladorai@itvizion.com - IT V... x ERAGI KANJI | Cuisines of Nilgiris x +

avancezone.com/nilgiris-cuisines/eragi-kanji-2/ Google

Most Visited ITVIZION web java General Maven XSD Swixml xml xsd valid Scriba Sony Recharge

« AKIPARAMANA Kelae gosu porriyal »

### Leave a Reply

Your email address will not be published. Required fields are marked \*

NAME \*

EMAIL \*

WEBSITE

COMMENT

You may use these [HTML tags](#) and attributes: `<a href="" title=""> <abbr title=""> <acronym title=""> <b> <blockquote cite=""> <cite> <code> <del datetime=""> <em> <i> <q cite=""> <strike> <strong>`

**POST COMMENT**

Sweet

Uncategorized

Wedding

### META

Log in

Entries [RSS](#)

Comments [RSS](#)

WordPress.org

14:20 07-05-2013

ERAGI KANJI | Cuisines of Nilgiris - Mozilla Firefox (Private Browsing)

File Edit View History Bookmarks Tools Help

Zimbra Web Client Sign In | Inbox - vhaldorai@itvizion.com - IT V... | ERAGI KANJI | Cuisines of Nilgiris

avancezone.com/nilgiris-cuisines/eragi-kanji-2/

Most Visited | ITVIZION | web | java | General | Maven | XSD | Swixml | xml xsd valid | Scriba | Sony | Recharge

« AKIPARAMANA Kelae gosu porriyal »

### Leave a Reply

Your email address will not be published. Required fields are marked \*

NAME \*

EMAIL \*

WEBSITE

COMMENT

You may use these HTML tags and attributes: `<a href="" title=""> <abbr title=""> <acronym title=""> <b> <blockquote cite=""> <cite> <code> <del datetime=""> <em> <i> <q cite=""> <strike> <strong>`

**POST COMMENT**

Sweet

Uncategorized

Wedding

---

#### META

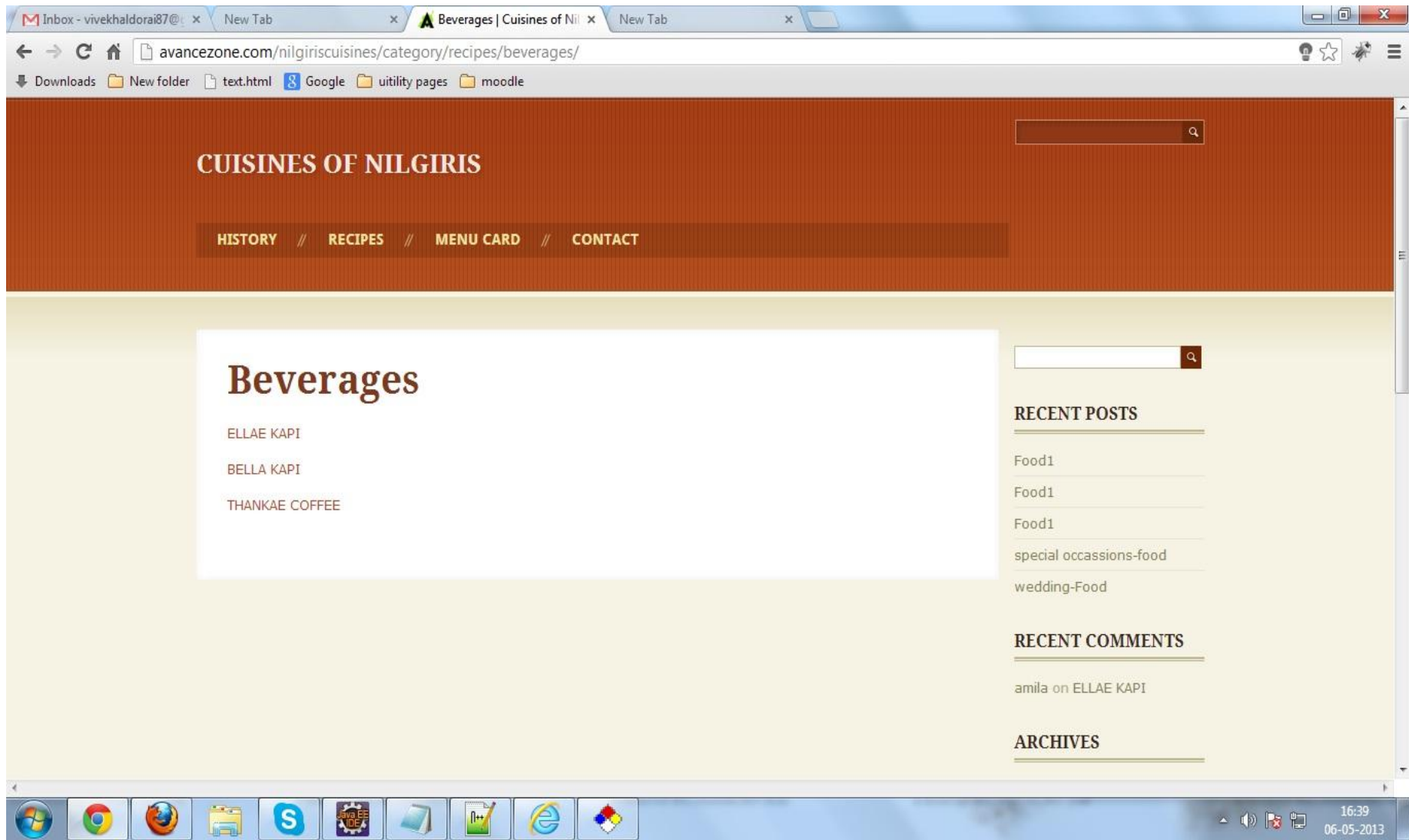
Log in

Entries [RSS](#)

Comments [RSS](#)

WordPress.org

14:20  
07-05-2013



# CUISINES OF NILGIRIS

HISTORY // RECIPES // MENU CARD // CONTACT

## Beverages

ELLAE KAPI

BELLA KAPI

THANKAE COFFEE

### RECENT POSTS

Food1

Food1

Food1

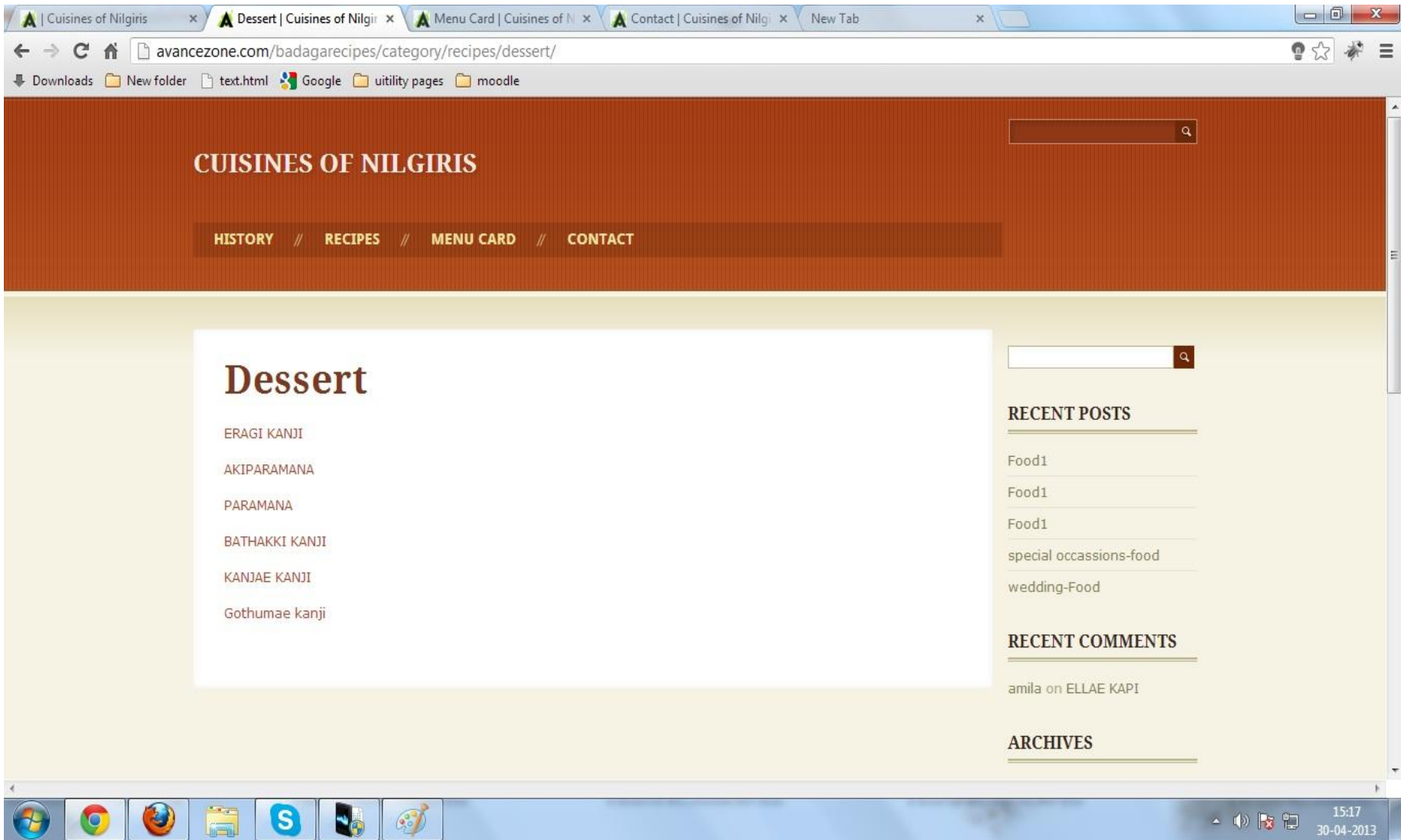
special occasions-food

wedding-Food

### RECENT COMMENTS

amila on ELLAE KAPI

### ARCHIVES



# CUISINES OF NILGIRIS

HISTORY // RECIPES // MENU CARD // CONTACT

## Dessert

- ERAGI KANJI
- AKIPARAMANA
- PARAMANA
- BATHAKKI KANJI
- KANJAE KANJI
- Gothumae kanji

### RECENT POSTS

- Food1
- Food1
- Food1
- special occassions-food
- wedding-Food

### RECENT COMMENTS

amila on ELLAE KAPI

### ARCHIVES

### 3 thoughts on “Thuppathet”

---



*sam* says:

May 7, 2013 at 9:11 am

Very tasty sweet , I love it more

[REPLY](#)



*Rajesh* says:

May 7, 2013 at 9:14 am

I have never taste such a sweet in my life , Really superb!!

[REPLY](#)



*naveena* says:

May 7, 2013 at 9:35 am

Nice dish!!! Nice to eat with Tea

[REPLY](#)

---

### Leave a Reply

Your email address will not be published. Required fields are marked \*

### META

---

[Log in](#)

[Entries RSS](#)

[Comments RSS](#)

[WordPress.org](#)

# Barley

**Barley** (*Hordeum vulgare* L.), a member of the **grass family**, is a major **cereal grain**. Important uses include use as animal **fodder**, as a source of fermentable material for **beer** and certain **distilled beverages**, and as a component of various **health foods**. It is used in soups and stews, and in **barley bread** of various cultures. Barley grains are commonly made into **malt** in a traditional and ancient method of preparation.

In a 2007 ranking of cereal crops in the world, barley was fourth both in terms of quantity produced (136 million tons) and in area of cultivation (566,000 km<sup>2</sup>).<sup>[2]</sup>

The **Old English** word for 'barley' was *bære*, which traces back to **Proto-Indo-European** and is cognate to the **Latin** word *farina* "flour". The direct ancestor of modern English "barley" in Old English was the derived adjective *bærlic*, meaning "of barley".<sup>[3]</sup> The first citation of the form *bærlic* in the *Oxford English Dictionary* dates to around 966 AD, in the compound word *bærlic-croft*.<sup>[4]</sup> The underived word *bære* survives in the north of Scotland as *bere*, and refers to a specific strain of six-row barley grown there.<sup>[5]</sup> The word **barn**, which originally meant "barley-house", is also rooted in these words.<sup>[3]</sup>

« [Wheat](#)

[Samal](#) »

## Leave a Reply

Your email address will not be published. Required fields are marked \*

NAME \*

EMAIL \*

WEBSITE

COMMENT

You may use these **HTML** tags and attributes: `<a href="" title=""> <abbr title=""> <acronym title=""> <b> <blockquote cite=""> <cite> <code> <del datetime=""> <em> <i> <q cite=""> <strike> <strong>`

**POST COMMENT**

## RECENT POSTS

- Bamboo Shoots
- Amaranth seeds
- Samai
- Barley
- Wheat

## RECENT COMMENTS

- naveena on Thuppathet
- Rajesh on Thuppathet
- sam on Thuppathet
- amila on ELLAE KAPI

## ARCHIVES

- May 2013
- April 2013

## CATEGORIES

- Accompaniments
- Beverages
- Desserts
- Main Dish
- Pregnancy
- Recipes
- Snacks
- Special Ingredients
- Special Occasions
- Sweets
- Uncategorized
- Wedding

## META

- Log in
- Entries [RSS](#)
- Comments [RSS](#)
- WordPress.org

## Amaranth seeds

**Amaranth** has been cultivated as a grain for **8,000 years**.<sup>[1]</sup> The yield of grain amaranth is comparable to **rice** or **maize**. It was a **staple food** of the **Aztecs**, and was used as an integral part of **Aztec** religious ceremonies. The **cultivation** of amaranth was banned by the **conquistadores** upon their conquest of the Aztec nation. Because the plant has continued to grow as a **weed** since that time, its **genetic** base has been largely maintained. Research on grain amaranth began in the **US** in the 1970s. By the end of the 1970s, a few thousand acres were being cultivated.<sup>[2]</sup> Much of the grain currently grown is sold in **health food** shops.

Grain amaranth is also grown as a food crop in limited amounts in **Mexico**, where it is used to make a **candy** called *alegría* (Spanish for happiness) at **festival** times. Amaranth species that are still used as a grain are: *Amaranthus caudatus*, *Amaranthus cruentus*, and *Amaranthus hypochondriacus*. The grain is popped and mixed with honey. In **Maharashtra** state of India, it is called "rājgirā" (राजगीरा) in the **Marathi language**. The popped grain is mixed with melted **jaggery** in proper proportion to make iron and energy rich "laddus," a popular food provided at the Mid-day Meal Program in municipal schools.

Amaranth grain can also be used to extract **amaranth oil** – a particularly valued **pressed seed oil** with many commercial uses.

« [Samai](#)

[Bamboo Shoots](#) »

### Leave a Reply

Your email address will not be published. Required fields are marked \*

NAME \*

EMAIL \*

WEBSITE

COMMENT

You may use these [HTML](#) tags and attributes: `<a href="" title=""> <abbr title=""> <acronym title=""> <b> <blockquote cite=""> <code> <del datetime=""> <em> <i> <q cite=""> <strike> <strong>`

POST COMMENT

### RECENT POSTS

[Bamboo Shoots](#)

[Amaranth seeds](#)

[Samai](#)

[Barley](#)

[Wheat](#)

### RECENT COMMENTS

naveena on Thuppathet

Rajesh on Thuppathet

sam on Thuppathet

amila on ELLAE KAPI

### ARCHIVES

[May 2013](#)

[April 2013](#)

### CATEGORIES

[Accompaniments](#)

[Beverages](#)

[Desserts](#)

[Main Dish](#)

[Pregnancy](#)

[Recipes](#)

[Snacks](#)

[Special Ingredients](#)

[Special Occassions](#)

[Sweets](#)

[Uncategorized](#)

[Wedding](#)

### META

[Log in](#)

[Entries RSS](#)

[Comments RSS](#)

[WordPress.org](#)

🕒 MAY 7, 2013. 👤 ADMIN 📄 SPECIAL INGREDIENTS. 🗨️ 0

## Bamboo Shoots

**Bamboo shoots** or **bamboo sprouts** are the edible *shoots* (new bamboo *culms* that come out of the ground) of many *bamboo* species including *Bambusa vulgaris* and *Phyllostachys edulis*. They are used in numerous *Asian* dishes and broths. They are sold in various processed shapes, and are available in fresh, dried, and canned versions.

### South Asia

In *Sikkim* and *Darjeeling*, India, bamboo shoots are known as *tama*. Some varieties of bamboo shoots commonly grown in the Sikkim Himalayas are *Dendrocalamus hamiltonii*, *Dendrocalamus sikkimensis* and *Bambusa tulda* locally known as *choya bans*, *bhalu bans* and *karati bans*, respectively are edible when young. These bamboo shoots are collected, defoliated and boiled in water with turmeric powder for 10–15 minutes to remove the bitter taste of the bamboo after which the *tama* is ready for consumption. *Tama* is commonly sold in the local markets during the months of June to September when young bamboo shoots sprout.

In *Assam*, India, bamboo shoots are part of the traditional cuisine. It is called *khoriṣa* and *bah gaj* in Assamese.

« [Amaranth seeds](#)

### Leave a Reply

Your email address will not be published. Required fields are marked \*

NAME \*

EMAIL \*

WEBSITE

COMMENT

You may use these [HTML](#) tags and attributes: `<a href="" title=""> <abbr title=""> <acronym title=""> <b> <blockquote cite=""> <cite> <code> <del datetime=""> <em> <i> <q cite=""> <strike> <strong>`

[POST COMMENT](#)

### RECENT POSTS

[Bamboo Shoots](#)

[Amaranth seeds](#)

[Samai](#)

[Barley](#)

[Wheat](#)

### RECENT COMMENTS

naveena on Thuppathet

Rajesh on Thuppathet

sam on Thuppathet

amila on ELLAE KAPI

### ARCHIVES

[May 2013](#)

[April 2013](#)

### CATEGORIES

[Accompaniments](#)

[Beverages](#)

[Desserts](#)

[Main Dish](#)

[Pregnancy](#)

[Recipes](#)

[Snacks](#)

[Special Ingredients](#)

[Special Occassions](#)

[Sweets](#)

[Uncategorized](#)

[Wedding](#)

### META

[Log in](#)

[Entries RSS](#)

[Comments RSS](#)

[WordPress.org](#)

## Desserts

[AKIPARAMANA](#)

[BATHAKKI KANJI](#)

[ERAGI KANJI](#)

[Gothumae kanji](#)

[KANJAE KANJI](#)

[PARAMANA](#)

### RECENT POSTS

[Bamboo Shoots](#)

[Amaranth seeds](#)

[Samai](#)

[Barley](#)

[Wheat](#)

### RECENT COMMENTS

naveena on [Thuppathet](#)

Rajesh on [Thuppathet](#)

sam on [Thuppathet](#)

amila on [ELLAE KAPI](#)

### ARCHIVES

[May 2013](#)

[April 2013](#)

### CATEGORIES

[Accompaniments](#)

[Beverages](#)

**[Desserts](#)**

[Main Dish](#)

[Pregnancy](#)

[Recipes](#)

[Snacks](#)

[Special Ingredients](#)

[Special Occassions](#)

[Sweets](#)

[Uncategorized](#)

[Wedding](#)

### META

[Log in](#)

[Entries RSS](#)

[Comments RSS](#)

[WordPress.org](#)

## Sweets

[ATHIRASA](#)

[BATHUSA](#)

[Diamond cut](#)

[Kadamittu](#)

[Kalettu](#)

[NAEVATHI](#)

[RAVA LADDU](#)

[SATTAE UPPITTU](#)

[Thuppathet](#)

### RECENT POSTS

[Bamboo Shoots](#)

[Amaranth seeds](#)

[Samai](#)

[Barley](#)

[Wheat](#)

### RECENT COMMENTS

naveena on [Thuppathet](#)

Rajesh on [Thuppathet](#)

sam on [Thuppathet](#)

amila on [ELLAE KAPI](#)

### ARCHIVES

[May 2013](#)

[April 2013](#)

### CATEGORIES

[Accompaniments](#)

[Beverages](#)

[Desserts](#)

[Main Dish](#)

[Pregnancy](#)

[Recipes](#)

[Snacks](#)

[Special Ingredients](#)

[Special Occasions](#)

[Sweets](#)

[Uncategorized](#)

[Wedding](#)

### META

[Log in](#)

Entries [RSS](#)

Comments [RSS](#)

[WordPress.org](#)

## Recipes

[Main Dish](#)

[Accompaniments](#)

[Snacks](#)

[Sweets](#)

[Desserts](#)

[Beverages](#)

### RECENT POSTS

[Bamboo Shoots](#)

[Amaranth seeds](#)

[Samai](#)

[Barley](#)

[Wheat](#)

### RECENT COMMENTS

[naiveena](#) on [Thuppathet](#)

[Rajesh](#) on [Thuppathet](#)

[sam](#) on [Thuppathet](#)

[amila](#) on [ELLAE KAPI](#)

### ARCHIVES

[May 2013](#)

[April 2013](#)

### CATEGORIES

[Accompaniments](#)

[Beverages](#)

[Desserts](#)

[Main Dish](#)

[Pregnancy](#)

[Recipes](#)

[Snacks](#)

[Special Ingredients](#)

[Special Occasions](#)

[Sweets](#)

[Uncategorized](#)

[Wedding](#)

### META

[Log in](#)

[Entries RSS](#)

[Comments RSS](#)

[WordPress.org](#)

## Snacks

- [AKKI PUTTU](#)
- [GOTHUMAE KANJIKAE](#)
- [GOTHUMAE PUTTU](#)
- [KANJIKAE](#)
- [KEERAE PUTTU](#)
- [KULAPANIYARA](#)
- [ORUTHA KEERAE](#)
- [PARAPPU VADAE](#)

### RECENT POSTS

- [Bamboo Shoots](#)
- [Amaranth seeds](#)
- [Samai](#)
- [Barley](#)
- [Wheat](#)

### RECENT COMMENTS

- [naveena](#) on [Thuppathet](#)
- [Rajesh](#) on [Thuppathet](#)
- [sam](#) on [Thuppathet](#)
- [amila](#) on [ELLAE KAPI](#)

### ARCHIVES

- [May 2013](#)
- [April 2013](#)

### CATEGORIES

- [Accompaniments](#)
- [Beverages](#)
- [Desserts](#)
- [Main Dish](#)
- [Pregnancy](#)
- [Recipes](#)
- [Snacks](#)
- [Special Ingredients](#)
- [Special Occasions](#)
- [Sweets](#)
- [Uncategorized](#)
- [Wedding](#)

### META

- [Log in](#)
- [Entries RSS](#)
- [Comments RSS](#)
- [WordPress.org](#)

# CUISINES OF NILGIRIS

[HISTORY](#) // [RECIPES](#) // [MENU CARD](#) // [CONTACT](#) // [SPECIAL INGREDIENTS](#)



## RECENT POSTS

[Bamboo Shoots](#)

[Amaranth seeds](#)

[Samai](#)

[Barley](#)

[Wheat](#)

## RECENT COMMENTS

naveena on [Thuppathet](#)

Rajesh on [Thuppathet](#)

sam on [Thuppathet](#)



**RECENT POSTS**

- Bamboo Shoots
- Amaranth seeds
- Samai
- Barley
- Wheat

**RECENT COMMENTS**

- naveena on Thuppathet
- Rajesh on Thuppathet
- sam on Thuppathet
- amila on ELLAE KAPI

**ARCHIVES**

- May 2013
- April 2013

**CATEGORIES**

- Accompaniments
- Beverages
- Desserts
- Main Dish
- Pregnancy
- Recipes
- Snacks
- Special Ingredients
- Special Occassions
- Sweets
- Uncategorized
- Wedding

**META**

- Log in
- Entries [RSS](#)
- Comments [RSS](#)
- WordPress.org



## Appendix1

### Questionnaire to elicit the details of the food frequency pattern of regions

1. Name :
2. Age :
3. Occupation :
4. Use of ingredients in the menu with frequency and quantity

<b>Food groups</b>	<b>Types of menu</b>	<b>Daily</b>	<b>Weekly</b>	<b>Fortnightly</b>	<b>Monthly Once</b>	<b>Occasionally</b>	<b>Quantity consumption / serving</b>
<b>Cereals</b> Raw rice Wheat Ragi Samai Wheat flour(refined) semolina Vermicelli Barely <b>Pulses</b> Red gram dhal Black gram dhal Green gram dhal Horse gram dhal Peas dry Peas green Rajmah							

Food groups	Types of menu	Daily	Weekly	Fortnightly	Monthly Once	occasionally	Quantity consumption / serving
		N	N	N	N	N	N
<b>Green leafy vegetables</b> Agathi Amaranth Mustard leaves Radish leaves Beetroot leaves Fenugreek leaves Pumpkin leaves Cabbage Others( specify)							
<b>Roots and tubers</b> Beetroot Carrot Onion Radish Potato Others (specify)							
<b>other vegetables</b> Beans Double beans Kidney beans Pumpkin Beans (avarea) Zucchini Broccoli Bamboo shoot Plantain stem Jack fruit (unripe) Mushroom Others( specify)							
<b>Fruits</b> Orange Apple Banana Plums Guava picches Strawberry Others (specify)							

Food groups	Type of menu	Daily	Weekly	Fortnightly	Monthly once	occasio nally	Quantity consumption /serving
<p><b>Fats and Oils</b></p> <p>Palm oil Coconut oil Refined oil Vanaspathy Gingelly oil Groundnut oil Others (specify)</p> <p><b>Condiments and Spices</b></p> <p>Chillies Garlic Ginger Others(specify)</p> <p><b>Beverages</b></p> <p>Tea Coffee Others(specify)</p>							

Food groups	Types of menu	Daily	Weekly	Fortnightly	Monthly once	Occasionally	Never	Quantity consumption /serving
<b>Milk</b> Cow's milk Buffalo milk Butter Ghee <b>Fleshy foods</b> Chicken Fish Meat								

### 5. Recipes used on special occasion

#### **Festival:**

Name of the festival

Course of menu

Category

Cooking time

Portion Size

Method of preparation

#### **Regional festival:**

Name of the festival

Course of menu

Category

Cooking time

Portion Size

Method of preparation

#### **Wedding:**

Name of the festival  
Course of menu  
Category  
Cooking time  
Portion Size  
Method of preparation

**Pregnancy:**

Name of the festival  
Course of menu  
Category  
Cooking time  
Portion Size  
Method of preparation

**Lactating mother:**

Name of the festival  
Course of menu  
Category  
Cooking time  
Portion Size  
Method of preparation

**Children**

Name of the festival  
Course of menu  
Category  
Cooking time  
Portion Size  
Method of preparation

**Types of fuels used and its details**

Solid fuels

Liquid fuels

Gaseous fuels

Any other/ Specify



**APPENDIX 3**

**Score card for sensory evaluation of recipe**

**Name of the panel member:**

**Age:**

**Date and time:**

Name of the dish	Category	Appearance	Texture	Flavour	Taste	Total

**Excellent - 5 ; Very Good – 4 ; Good - 3 ; Fair - 2; Poor - 1.**

**Signature of the panel member**