

DOCUMENTATION OF TRADITIONAL CONVENIENCE FOODS OF NORTH KARNATAKA

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1. INTRODUCTION

Food plays an important role in strengthening the bonds of friendship and belongingness. From prehistoric times there has been considerable mixing of cultures and cuisines within India. Today, the endless variations in cuisine reflect religious, community, regional and economic differences. This is also reflected in Karnataka, which has different agro climatic zones, determined by the variations in crops grown, occupation and food habits, which are delicately woven in the delicate fabric of rich cultural heritage. Each culture is identified with typical customs, rituals and food habits. The foods prepared and served habitually, and during ceremonies, festivals and rituals are influenced by the ethno botanical resources. These resources used in traditional foods are based on location specific demands, culture, economy, ethnicity, food habits and overall needs. The foods processed and prepared traditionally in different regions are intimately connected to ones socio-cultural, ecological, spiritual life and health (Singh *et. al.*, 2006). It has been proposed that the ethnic foods not only demonstrate the creativity and treasure of food heritage but also incremental (an increase in number or amount) learning women to sustain the life and ecosystem as a whole.

The technological advancement, urbanization, mechanization, migration, increased women employment away from homes and several other factors have a profound influence on habitual food preparation and also special occasions foods. The traditional foods and food habits are being replaced by modern food culture. The rise of global village concept, where the whole world is considered as being closely connected by modern telecommunications and as being interdependent economically, socially and politically the foods are becoming global. Indian curries are appreciated by Americans. The cuisines of China, Thailand and Italy have crept in Indian eateries and homes. The traditional foods requiring tedious processing protocols are substituted with modern ready to use/ready to eat foods. Such foods have entered both rural and urban kitchens. Economic empowerment, affordability, easy access and availability of processed foods in the market have influenced the type of foods consumed by the population. A large number of women now are spending at least one third of the day on job and find less time in long cooking regimes.

In the recent past food has become internationalized so as to have reached a high degree of cultural fusion and big-brand-name product orientation in the developed countries. The instant meals, frozen foods, fast foods, breakfast cereals, and other such mass-produced, packaged, and branded food products are though popular even in India, they compete with traditional regional diverse foods. Despite the many differences between the two food cultures, one thing binds them in a common process is the struggle of maintaining cultural identity and dissolving into the unknown modern food culture.

Karnataka being a land of rich heritage of tradition and culture endows in numerous traditional foods of diverse sensory qualities. Foods of plant and animal origin appropriately cooked with spices, condiments and other adjuncts and transformed into delicacies through different cooking methods. These traditional foods also encompass several convenience foods which are prepared and preserved for extended use which can be termed as convenience foods. These convenience foods serve as instant foods to enhance food variety during emergencies, because a considerable amount of the preparation has already been carried out. There have been various kinds of traditional convenience foods (TCFs) which are the non festive, non ceremonious foods with shelf life of at least one week, consumed with minimum or no processing and the preparatory protocol passed from one generation to another. These TCFs includes ready to use and ready to eat main foods, sweets or accompaniments that enhance sensory quality of foods served or increase the appetite of consumers. The convenience foods are significant because they save cooking time, the variety lessens food wastage and provide seasonal foods throughout the year.

The TCFs very often are passed on from one generation to the next by word of mouth. Although there has been a gradual shift from traditional cultural foods to modern easy to prepare foods, there is a hidden yearning for traditional foods of ethnic origin which appease the minds as well as senses. There is a need to support and preserve traditional food cultures and the TCFs for future generations to enjoy and cherish the taste which are rapidly vanishing away in to oblivion.

To meet the demands of the people yearning for ethnic foods several TCFs are being manufactured commercially, but there is no much information documented on TCFs prepared in different parts of Karnataka in particular. Hence, the present investigation was planned to study the TCFs with the following specific objectives.

1. To document the traditional convenience foods prepared in different zones of rural and urban Karnataka
2. To elicit the factors associated with preparation of traditional convenience foods
3. To estimate the availability of traditional convenience foods in the market shelves of Dharwad
4. To evaluate the performance of traditional convenience foods in market among different populations
5. To study the modifications in preparation of traditional convenience foods
6. To compute the nutrient composition of selected traditional convenience foods of Dharwad market

2. REVIEW OF LITERATURE

Convenience foods are instant aids in quick service of foods, save time, labour, energy and also add variety to diet. Traditionally there are a number of convenience foods, specific to each region and culture. Literature pertaining to the traditional foods, convenience foods, nutrient composition and standardization are detailed in this chapter.

2.1 Historical perspectives of traditional Indian foods

A review of multicultural heritage of traditional Indian foods has been described by Parpia (2004). Indian food has heritage of 40 major cultures and many more sub- cultures which were brought together under one rule over the last two centuries. Each ethnic culture developed in isolation from the crops grown or animals reared. It was reported that many cuisines were based on combinations of a variety of primary food materials that complimented and supplemented nutritionally.

Achaya (1994 and 2002) consolidated the history and knowledge of traditional Indian foods and opined that Indian food as a health promoting entity and a means of protecting quality of life. Events that contributed to inter ethnicity and change of food culture, impact of philosophies and religion, the post independence stimulus, the technological change, tradition and nutrition and the future challenges for traditional foods have been scholastically explained by the author.

Rao (2000) described the historical background of food and cuisine of Indian culture. He opined that the sub-continent represented an amalgam of numerous cultures and cuisines, a home for a vast diversity of traditional foods and a virtual treasure house of countless culinary craft pieces of par excellence. The cultures dated back to the epic ages of Ramayana and Mahabharatha, when the food culture and indigenous food technology attained zenith. The author quoted Valmiki Ramayana where in the exquisite description of the enormous variety of dainty foods, beverages, liquors stocked in Ravana's lavishly endowed pantries. He opined that the vast potential of Indian classical food technologies and the truly scientific principles underlying the traditional food formulation and processes have remained largely unexplored and unexploited, which is in contrast to the advances made in modern food science and technology world over.

2.2 Traditional foods of India

Generally food pattern is governed by food production and availability, geographic location, occupation, economic status and culture, custom and traditional practices help in adhering to the food pattern. Among the diverse food culture of the world, the traditional convenience foods have been documented by several investigators. Such documentation not only helps in understanding food culture but also in maintaining and protecting the food heritage for newer generation.

Kaur and Kawatra (1996) reported that many traditional foods were considered as sacred and consumed during special occasions such as at marriage or in first trimester of lactation period. Products such as *khoa pinni*, *dal pinni*, *panjiri*, *halwas* of various kinds, products made from colostrum of cow or buffalo, *makki ki roti* and *sag*, different types of *missi roti* were reported from Punjab. Various pulse based traditional foods such as moth bean *usal*, *pakoda*, *varan*, *besan laddu*, *dhokla* were registered by Khot *et.al.*, (1996). *Mathi*, *mongra*, *matar*, *khasta katchori*, *khasta seighara* and *samosa* were reported to be popular deep fat fried, salted and spiced savory preparations in Punjab, Haryana, Rajasthan, Uttar Pradesh, Jammu and Kashmir and other adjoining states of India. (Kalra *et.al.*, 1998). Further, Manan *et.al.*, (1998) recorded that in Northern India, traditional sweet meats prepared from amaranths seeds were popular and manufactured on cottage or home scale level.

Devadas (1999) conducted a survey to document the traditional foods of Southern India. An array of traditional foods viz., *kareve paku podi*, fish pickle, *vadialu*, *chegodilu*, *gatti pakodi*, *nuvulakaram*, *kobbarikaran*, *patharekalu*, *gongara chatni* from Andhra Pradesh; *bisibelebath*, *vangibath*, *obbattu*, *chakkali*, *badam feast*, *adai dosa*, *methi paratha*, *sattu*, *happala*, *jamun*, *puliyogare* and *chiroti* were documented from Karnataka; *adirasa*, *gheedar*, *idiappum*, *kolaputtu*, *kombwneva*, *palkolukatti*, *pongali*, *chola desai*, *kanjeevaram*, *idli*, *omapodi* and *paniyaram* were recorded from Tamil Nadu; *naraga* and *nellikka achar*,

kolivpperi, sarkargare, adapradhamam, aviya, achapam, kozhalappam ellu, urunda, aval kesavi and *unniappam* were registered from Kerala.

Traditional deep fat fried snack items of Mysore were studied by Geethalakshmi and Prakash (2000). A variety of sweet and savoury snack foods such as *chakli, kodbele, wada, bajji, nipattu*, chips made of banana and jackfruit and the sweet snacks *kajjaya, karjikai, jalebi, karagadabu, sukkinunde, balushah, chiroti* were documented.

Madeli a wheat based traditional sweet item of North Karnataka was documented by Pattan *et.al.*, (2001). Malhotra *et.al.*, (2004) reported various types of traditional sweets prepared using nuts and oilseeds. Products such as *alsi ke laddu, sundh ke laddu*, coconut *laddu* and groundnut *ke laddu, gachak* groundnut and greengram *laddu* were the commonly consumed traditional sweets in Himachal Pradesh.

An extensive study of traditional foods prepared during Hindu festivals in North Karnataka was carried out by Inamdar *et.al.*, (2005). It was reported that 78 types of traditional foods were prepared during different festivals, and among those, 33 were savoury items and 45 were sweet dishes. It was indicated that a majority of foods were cereal based, prepared either by roasting, pounding, pan baking or boiling methods. The number of fried foods was relatively less (deep fat fried 12, shallow fried 4) compared to boiled (18) or roasted (17) foods. Use of typical ingredients such as wheat gluten, gum crystals, traditional pasta products, minor oilseeds such as linseed and niger, recrystallized special sugar, safflower milk and seeds of marking nut tree were very common.

In a study to develop food frequency questionnaire and nutrient data basis for urban and rural Indian populations with diverse dietary habits, Bharathi *et al.* (2008) identified a total of 129 and 102 food items respectively for urban and rural populations and 82 items were common in both the groups. A total of 12 and 7 foods respectively in urban and rural populations were consumed in the form of *chutney/salads/pickles/papads* and 5 were common in both. In urban and rural areas, respectively 11 and 7 desserts were documented and among these 5 were common. It was reported that *mysorepak, laddu* and similar other foods contributed 0.1 and 0.2 percent of total energy intake respectively in urban and rural groups.

Thus the studies reflected different traditional foods of different regions which were based on diverse ingredients and processing techniques.

2.3 Nutrient composition of traditional and value added traditional foods

The nutrient composition of traditional foods varies owing to composition and methods of processing. It is important to know the nutrient composition of such traditional foods for they could be justifiably employed in nutritional intervention programmes or in dietetics and value addition.

Jayaraman *et al.* (1991) reported that traditional *avail* mix recorded fair amounts of protein (12%), fat (24%) and calories (450 Kcal/100g). *Khakra*, Indian flat bread like *chapati*, a popular traditional food in western India particularly Gujarat was studied by Prakash *et al.* (1991) for nutrient composition. It was indicated that *khakra*, prepared with whole wheat flour recorded moisture 4.4(%), protein 14.4(%), fat 12.5(%), ash 2.3(%), crude fibre 2.5(%) and carbohydrate 63.9(%) contents. The shelf life of *khakra* packed in polyethylene (65 – 70 micron) or polypropylene (32 micron) pouches was reported to be about three months under normal conditions.

Traditional Nigerian based foods viz., *aadun* and *kokaro* were reported to contain 12.5(%) and 16(%) moisture, 7.49 (%) and 6.42 (%) crude protein, 28.5 (%) and 22.9 (%) fat and 60.0 (%) and 66.6 (%) total carbohydrate, 3.0 and 2.84g ash and 360 and 355 Kcal per 100g, respectively (Adegoke and Adebayo, 1994).

Kulkarni *et al.* (1994) reported that *sevia* a traditional savoury snack prepared from a blend of rice flour and colocasia recorded moisture, ether extractives, protein, total ash and sodium chloride (2.1, 24.6, 8.3, 5.2, 3.3%, respectively). The moisture content increased from 1.3 to 2.7 (%), free fatty acids from 0.52 to 0.56 (%) and peroxide value from 0.50 to 2.32 meq O₂ / kg product, after 60 days of storage at room temperature in polypropylene bags.

Nutritive value of *panjiri*, *khoa pinni* and *dal pinni* the traditional foods of Punjab were registered by Kaur and Kawatra (1996). *Dal pinni* was reported to be most nutritious containing good amounts of crude protein 12.8(%) and ether extracts 31.9 (%). Phosphorous, iron and copper contents were recorded (898, 3.44 and 0.53 mg/100g, respectively). *Dal pinni* also registered highest *in vivo* iron absorption of 4.86 per cent and copper solubility of 87.9 per cent. The traditional food *panjiri* was reported to contain moisture 20 (%), ash 1.1(%), crude protein 3.9 (%), ether extracts 30.0 (%), crude fiber 2.9 (%), carbohydrate 62.1 (%), neutral detergent fiber 12.0 (%) and energy 593 (Kcal / 100g). The corresponding values in *khoa pinni* were reported to be 14.0, 3.7, 10.3, 30.9, 3.5, 51.6, 13.5 per cent and 490 Kcal per 100g, respectively. *Panjiri* recorded highest soluble iron 62.4 (%) and zinc 75.0 (%) compared to *khoa pinni* 57.8 and 38.2 (%), respectively and *dal pinni* 49.3 and 32.9 (%), respectively. Rat feeding experiments indicated highest protein digestibility of *dal pinni* 76.7(%) followed by *khoa pinni* 73.7(%) and *panjiri* 57.6(%). *Dal pinni* recorded highest values for true protein digestibility 89.73(%), biological value 90.08 (%) and net protein utilization 80.83 (%). The corresponding values for *panjiri* were 75.05, 75.25 and 56.37, respectively and for *khoa pinni* were 85.23, 87.25 and 74.33 per cent, respectively.

Nutrient composition of instant vegetable *wadi* prepared with bengal gram flour along with spices was studied by Sharma *et al.*(1996). It was reported that the instant vegetable *wadi* recorded a protein 14.41(%), fat 6.65(%). Calcium, iron and zinc contents were reported (130, 457, 45ppm/100g, respectively). The instant spiced vegetable *wadi* recorded protein 10.73(%) and fat 23.95(%). The minerals calcium, iron and zinc contents were 289, 227 and 47 ppm/ 100g, respectively. A North Indian deep fat fried snack *matar* was analyzed for nutrient composition by Bawa and Singh (1998). It was reported that *matar* recorded less moisture 2.54 (%), protein 11.97 (%) and fat 18.40 (%). Carbohydrate and ash contents were 65.17 and 1.32 per cent per cent respectively. Bains *et al.* (1998) revealed that *makki roti* a traditional Punjabi food contained highest quantities of zinc, iron and copper (2.74, 6.80 and 0.81 mg / 100g, respectively).

Nutrient composition of some traditional foods of Karnataka was reported by Begum *et al.* (1998). It was observed that fat content was higher in fried 10-39 (%) and baked 20 – 33 (%) cereal based products. Calcium content was found to be high in ragi *roti* 18.2 (mg %) and ragi balls 78 (mg %) while iron content was high in bajra *roti* 7.6 (mg %) and wheat *paratha* 6 (mg %).

Prasad *et al.* (2000) estimated proximate and mineral composition of 30 different traditional and popular Indian processed foods; categorized as either ready-to-eat or easy-to-reconstitute or freeze dried products. The study included vegetable *pulav*, dehydrated pulses/*curries*, *upma*, mutton/chicken curry and fruit beverage powders. The products were found to provide approximately 350–660 Kcals/100g of energy. The moisture content of ready-to-eat foods ranged between 57.4 to 76.6 per cent. The processed mango bar and in-pack sterilized sooji *halwa* recorded low moisture levels of 13.6 and 20 per cent respectively. The easy to rehydrate foods recorded a moisture content varying between 3.3 to 6.7 per cent. The protein and energy contents were high 14.8 to 18.4 (%) and 346 to 461 Kcal/100g, respectively. Among the freeze dried products chicken *pulav* recorded a protein content of 29.2 per cent. Canned *upma* recorded highest iron content 150 mg/kg followed by canned vegetable *pulav* 60mg/kg.

A traditional wheat based sweet dish *madeli*, a product of Karnataka was reported to contain 4.98 per cent protein, 4.41 per cent fat, 1.19 per cent crude fibre and 2.38 per cent ash (Pattan, *et al.* 2001). Khattak *et al.* (2003) evaluated nutrient composition of four types of each of *burffies* and *rasgullas*, five types of sweets and 11 other miscellaneous products namely *amratee*, *halwa*, *laddu*, *samosa*, *pateesa*, *perra*, *namakpora*, *pakora*, *masu*, *abidana* and *pistaroll*, prepared in Peshawar, Charsadda, Nowshera districts of Peshawar division, Mardan and Swabi districts of Mardan division in Pakistan. The nutrient composition of *burffies* was reported to contain moisture (8.87%), protein (6.26%), fat (18.39%), ash (1.69%), fiber (1.97%), carbohydrate (63.10%) and energy (445 Kcal per 100g). The *rasgullas* was indicated to contain moisture (21.20%), protein (7.74%), fat (28.29%), ash (1.45%), fiber (1.64%), carbohydrate (39.66%) and energy (445 Kcal per 100g). The average proximate composition for sweets was moisture (8.88%), protein (8.98%), fat (30.21%), ash (1.13%), fiber (3.35%) and carbohydrates (48.06%). The average calorific value of sweets was 501 Kcal/100g of the product. The protein contents of *amartee*, *halwa*, *laddu*, *samosa*, *perra*,

pateesa, namakpara, pakora, masu, abidance and *pistaroll* were 3.33, 2.70, 5.43, 5.25, 8.90, 2.63, 5.76, 7.91, 2.63, 2.95 and 8.58 per cent, respectively. The fat contents were 18.53, 20.51, 31.95, 31.57, 2.01, 23.30, 28.00, 23.00, 31.00, 21.10 and 18.68 per cent, respectively. The carbohydrate contents of these products were 68.33, 50.34, 45.12, 31.84, 63.13, 69.02, 58.66, 11.08, 62.53, 56.47 and 55.26 per cent, respectively. The caloric values of these products were 453, 397, 490, 433, 306, 496, 510, 283, 540, 428 and 424 Kcal /100 g, respectively. In general confectionary products were reported to be low in protein and high in fat and sugar.

Convenience mixes which could be used as weaning foods were developed by Premavalli *et al.* (2003). The nutrient composition of sweetened mix indicated moisture 4.13 (%), fat 21.40 (%), Calcium 128 (mg %) and iron 4.50 (mg %), where as nutrients of spiced mixes with values of moisture 3.85 (%), fat 20.05 (%), calcium 194 (mg %) and iron 7.72 (mg %). Soy fortified maize *sattu* prepared by blending bengal gram dhal in different preparations indicated a wide range of values for protein 16-72 (%) and fat 26-13.9 (%) contents (Deshpande *et al.* 2004).

Malhotra *et al.* (2004) computed nutrients of *alsi ke laddu* based on nuts and oilseeds commonly consumed in Himachal Pradesh. Fat, crude fibre, energy, calcium and iron contents were 29.85 g, 1.23g, 48 Kcal, 142 mg and 23.95mg / 100g, respectively on fresh weight basis. Das *et al.* (2005) evaluated major nutrients, calcium and iron content of some common Assamese recipes based on nuts and oilseeds. The study revealed that all the recipes were energy dense. Protein content was highest in *charchari* with fish. Highest mineral content was registered in gingelly *laddu* and highest fiber in *charchari* with drumstick. Carbohydrate content was highest in groundnut *chikki*, where as iron and calcium was high in gingelly based foods. Mustard based recipes also recorded higher iron content.

Nutrient composition of traditional festival foods of North Karnataka was computed by Inamdar *et al.* (2005). It was reported that gingelly seed *holige* recorded highest carbohydrate and calcium content (18.30g, 12.20 mg) but low sodium and potassium (0.54 mg, 7.80 mg); while Bajra *roti* was found to be highly nutritious, providing higher levels of energy, protein, calcium, iron, magnesium, copper and zinc (137 Kcal, 4.43g, 32.64mg, 3.02mg, 49.20mg and 1.27mg per serving), than rest of the savoury festival foods. *Undigadabu* was a low calorie food (38 Kcal /serving) and jowar *wade* contained higher amounts of fat (12.79g/ serving). Another traditional cereal based product *akki huggi* cooked in safflower seed milk was relatively rich in β carotene. Calorie content among the sweets ranged from 51 to 221 Kcal/ serving. *Modaka* and groundnut *laddu* were rich in calories and fat (221 and 189 Kcal and 9.85g and 7.11g). Groundnut *laddu* was rich in protein, sodium and potassium (6.15g, 8.34mg, and 91.44mg per serving). Among the savory food accompaniments, the groundnut chutney powder recorded high values for calorific value and zinc (55 Kcal, 0.37 mg/ serving) where as niger seed chutney powder recorded low values for calories and sodium (36 Kcal and 0.02mg/ serving) .

Value added *laddu*, developed from of high quality protein maize in combination with ragi, green gram, gingelly seeds, amaranthus and jaggery was analyzed for nutritional composition and tested for common acceptability by Priyanka and Singh (2005). The *laddu* recorded moisture, ash, fat, crude fibre, crude protein, carbohydrate, sugar and starch was 6.9, 3.8, 6.4, 2.05, 16.2, 17.05, 2.4 and 45.5 g, respectively per 100g. Iron and calcium content were 13.23mg and 418.03 mg/100g, respectively.

A study was conducted to evaluate the lycopene content of tomato based processed products such as jam, squash, pulp and pickle by Hegde *et al.* (2007). It was reported that lycopene content of jam was highest (50 mg/ 100g), followed by pickle (30mg/100g), squash (15mg/100g) and pulp (10mg/100g).

Midha and Mongra (2007) prepared vermicelli from whole wheat flour, malted wheat flour and malted wheat, green gram dhal and spinach flour to improve nutrient content. The moisture, protein, carbohydrates, fat, energy, iron and calcium of whole wheat flour vermicelli, malted wheat flour, green gram dhal and spinach flour vermicelli are (7.7, 9.3, 75.2, 2.7 (%), 362 Kcal, 6mg and 25mg /100g), (6.9, 9.4, 74.9, 1.7 per cent, 353 Kcal, 5.9 mg and 30 mg percent) and (7.6%, 13.5%, 69.8%, 1.2%, 344 Kcal, 5mg% and 45mg%).

A study was conducted to determine the chemical composition, texture and flavor of *papads* prepared from *mungbean, kesari* dhal and black gram dhal incorporating soy flour

(Rahman and Uddin., 2008 a and b). The study was conducted in the Department of Food Technology and Rural Industries; Bangladesh Agricultural University, Mymensingh. Five different types of *papads* were prepared using (0-20%) soya flour with pulses and other ingredients. The moisture, protein, fat, ash and total carbohydrate content in the dried *papad* samples were recorded in the range of 10.10 to 10.33(%), 24.13 to 28.03(%), 1.06 to 5.35(%), 1.53 to 1.97(%) and 54.55 to 62.95(%), respectively. A sharp increase in fat content was observed with increased incorporation of soya flour in the *papads*. No remarkable changes in moisture content, texture and flavor were observed up to 5 months of storage in ambient condition (27 to 35°C) indicating that the products were shelf-stable up to 5 months. The fried soya *papads* contained 2-3 (%) moisture, 0.4 – 0.6 (%) ashes, 26-36 (%) fat, 28-30 (%) protein and 33.4 – 42.9 (%) total carbohydrate. The result showed that minimum frying time for dried *papads* required to reach desired final moisture content of 2 – 2.5 (%), was 22 seconds at 170°C, 2.0 (%) at 180°C and 1.6 (%) at 190°C when the moisture content of *papads* varied from 2 – 2.5(%).

Two types of *laddus* with popped pearl millet alone and a combination popped pearl millet, roasted, dehulled chickpea and groundnut were prepared by Singh and Sehgal (2008) in Home Science College, Banasthali of Rajasthan. The results revealed that the latter *laddus* recorded significantly higher calcium, phosphorous, iron, polyphenol and phytic acid contents but low *in vitro* protein and starch digestibility. Cellulose and lignin content were reported to be higher in sole pearl millet *laddus*.

Value addition trials and nutrient analysis of selected traditional groundnut products viz., chutney powder, *holige* and *chikki* were conducted by Jamuna (2009). It was reported that the products were rich in protein and energy. The value added (rice flakes incorporated) *holige* was revealed to be rich in iron 6.2 (%) and *chikki* in calcium (119.4 mg/100g). Sensory quality scores were better for mixed dhal groundnut chutney powder than the lone ground nut chutney powder. Value added *holige* was very well accepted. It was concluded that traditional recipes could be made more nutritious and acceptable using nutritious ingredients.

Thus variation in nutrient composition of various traditional and value added traditional foods were reported reflecting variation in ingredients and processing protocols employed.

2.4 Standardization and value addition of traditional foods for food industry

Recognizing the scope of traditional processed foods, an international workshop with UN University was organized in India in 1983. It was recommended that there was a need to upgrade the traditional food technologies for industrial applications. Consequently a special panel on traditional foods was appointed in 1994 to initiate a study of traditional Indian foods. The panel aimed to collect and consolidate the rich knowledge, the techniques of making them so that the prevalent techniques could be made more viable and economical through integration of modern scientific knowledge for enhanced supply of traditional foods to meet the rising demand of processed foods, improve nutritional value and generate employment. Five workshops of 2-3 days along with exhibition of ethnic foods in different zones of the country were organized in collaboration with CFTRI and provided valuable information on traditional processing technologies, nutritional aspects, adaptation and development of appropriate system for packaging of indigenous processed foods (Papria 2004). It was documented that traditional foods were prepared from a variety of raw materials in different ways thus resulting in variation within a single product. It was suggested that value addition would help to improve the nutritional quality, extend shelf life and make the products cost-effective so that the products could be purchased by more consumers.

Sastry and Krishnamurthy (1974) standardized mango pickle recipe with acceptable sensory quality. The formulation consisted of mango pieces (250g), salt (60g), mustard powder (20-40g), chilli powder (20g), turmeric powder, fenugreek seeds and bengal gram dhal (2-4g each) and gingelly oil (20-30ml).

Value addition trials through incorporation of grain amaranth in traditional foods such as *mudde*, *roti*, porridge and weaning mixes were conducted by Sudha (1989). Acceptable products by incorporating 90 per cent grain amaranth in weaning mix and porridge, 50-55 in *mudde*, 60-75 in *roti* were developed. Protein and energy content of grain amaranth

incorporated *mudde*, *roti*, porridge and weaning mixes ranged from 9.20 to 14.73 per cent and calorie from 376 to 411 Kcal per 100g.

Inderse an Indian traditional deep fat fried sweet, consumed in the states of Uttar Pradesh, Rajasthan, Madhya Pradesh as well as in parts of Pakistan; was prepared from partially fermented rice flour and powdered sugar (Saxena *et al.* 1991). Rice flour prepared from 24 h. fermented grains with *Lactobacillus plantarum* could yield *inderse* which was light brown, chewy, soft and crisp and was of 80% honey-comb structured. The product stored well up to 45 days, when packed in low density polyethylene, polypropylene and friction top tins.

Optimum condition and recipe for preparation of *gurdani* an Indian traditional sweet meat prepared from bengal gram dhal flour by deep fat frying in the form of *sevian* and subsequently coating uniformly with jaggery was recorded by Saxena *et al.* (1992). Trials conducted in the preparation indicated that product of optimum quality was obtained by using 100 parts of *besan*, 100 parts of jaggery, 20 parts of shortening and 40 parts water, where the product was golden color, with soft and crisp texture having appropriate optimum taste of *gurdani* and stored well up to 3 months when packed in low density polyethylene, polypropylene, high density polyethylene and fraction top tins.

Rao *et al.* (1993) standardized cashewnut *burfi*, containing cashewnut 22.1 (%), whole milk powder 11.05(%), sugar 44.2(%), hydrogenated fat 11.05(%), cardamom powder 0.55(%) and water 11.05(%). The *burfi* registered a shelf life of three months at 37°C and six months at ambient temperature with added preservatives when packed in polypropylene and paper-aluminium -foil polyethylene laminated pouches.

Value added traditional savoury snack was developed by Kulkarni *et al.* (1994) by blending three parts of rice flour with seven parts of cooked colocasia to obtain crisp and crunchy product. The product was acceptable up to 60 days of storage at room temperature, when packed in 250 gauge low density polyethylene pouches.

Standardized preparatory and storage protocol for *pinni* was registered by Saxena *et al.* (1996a). It was reported that a recipe comprising of 15 parts of each sugar and black gram dhal paste, 10 parts each of fat and water 7.5 parts of *khoa*, two parts of bengal gram flour yielded a highly acceptable product. The storage quality results indicated a shelf life of 10 days in high density polyethylene pouches of 220 gauge and addition of 0.05 or 0.10 (%) sorbic acid or 0.05(%) potassium sorbate in *pinni* enhanced the shelf life to 30 days under ambient conditions.

Ghewar, an Indian traditional sweet, prepared from refined flour, deep-fat fried into honey comb structure and sweetened with sugar syrup was standardized by Saxena *et al.* (1996b). It comprised of refined flour (10kg), fat (2kg), sugar (2 kg), ice (4kg) and water (22 l.). The product could be stored well up to 30 days in low density polyethylene 200 gauge pouches and in open trays at ambient temperature (20± 5°C).

Standardization trials for value added instant bengal gram dhal *wadi* mixes with spices and vegetables were carried out by Sharma *et al.* (1996). Highly acceptable *wadis* with bengal gram dhal flours and vegetables, dried to less than 5 per cent moisture levels could be prepared and stored without adversely affecting the sensory properties. The addition of spices enhanced the shelf life to more than a year at 37°C.

Status of *wadian*; *wadi*, *wari* or *badi* an indigenous fermented leguminous savoury product, relished on an adjunct in curry preparations was reviewed by Manan *et al.* (2002). It was suggested that use of simple machines, non traditional pulses, dehydrators and suitable packaging materials would result in manufacture of *wadian* of assured quality on commercial scale and would give impetus to traditional food industries.

Value added *papads* based on cowpea were standardized by Bharathi *et al.* (1995). It was reported that good quality cowpea *papad* could be obtained with cowpea flour (100g), water (45 ml), salt (6.5g) and carbonate (1.5g), stored well up to 4 months in air tight plastic container. Standardization trials were conducted by Patki and Arya (1997) to develop instant mix for *khichadi*- a traditional food of Maharashtra. Precooked dehydrated rice, whole green gram, spices and hydrogenated fat were combined to formulate an acceptable mix which remained stable in polypropylene and paper aluminium foil polythene pouches for more than a year.

Kalra *et al.* (1998a) while standardizing the recipe for preparation of most popular traditional savoury item *mathi*, indicated that frying medium played an important role in determining shelf life of *mathi*. *Mongra* an important traditional savoury food was standardized by Kalra *et al.* (1998b). The recipe consisted of salt, cumin seeds, black paper and refined cottonseed oil. It was recorded that addition of antioxidant (BHA at 0.1g/kg flour) affected a better shelf life of up to 4 months.

Traditional savory product of Nepal *masyaura* a meat substitute, prepared from partially fermented legumes was studied by Dahal *et al.* (2003). *Masyaura* are dried balls, conveniently stored for later use, fried and mixed in curry to make soups and served with rice. *Masyaura* was prepared from black gram dhal and colocasia tuber by traditional method of sun-drying and also evaluated for cabinet drying methods. It was reported that *masyaura* prepared by drying in cabinet drier, was acceptable in terms of color and physical appearance. It was opined to be more hygienic compared to sun drying.

Shanathi *et al.* (2000) developed instant mixes for the traditional *vada* mixes with and without the addition of hydrogenated fat. The instant *vada* mixes were prepared using Bengal gram dhal flour (5 g), black gram dhal flour (5g), refined flour (5g) and raw rice flour (5g) to acceptable *vadas*.

Effect of processing variables such as the type of flours (namely green gram, bengal gram, black gram and red gram dhal), heat treatment and addition of fat on quality traditional savoury item *chakkli* was studied by Geethalakshmi and Prakash (2000). It was reported that addition of fat and heat treatment improved the sensory parameters of *chakkli*. The products prepared from black gram and red gram dhal flours absorbed more fat during frying. The former products exhibited good storage life up to 4 weeks with a marginal rise in free fatty acids.

A simple indigenous and inexpensive technique for preparation of dehydrated product potato-sago *papad* for cottage industry was developed by Marwaha and Sandhu (2003). The procedure encompassed the mixing of 100g of mashed potato with 20g partially cooked sago powder and subsequent sun drying.

A study was conducted by Surendranth *et al.* (2004) to alleviate cumbersome preparatory protocol and short shelf life of *gas-gase payasam* – a traditional dessert of Karnataka by developing a protocol of dry mix. The dry mix was prepared using poppy (*Papaver somniferum*) seeds, desiccated coconut powder or grated coconut, milk and sugar in the proportion of 2:1:1:10:8. The developed mix exhibited a shelf life of 6 months at ambient when packed in polyethylene pouches.

Sattu a roasted flour mixture of cereal and pulse combination is a ready to eat traditional snack food in India. Value addition trails for *sattu* were carried out by blending soybean, maize and bengal gram in different proportion to enhance the nutritive value. The grains were soaked to attain 30 per cent moisture, roasted in hot sand bath for 10-12 minutes, dehulled and mixed in different proportions of 10:20:70; 25:35:40; 30:10:60 and 40:20:40, respectively for soybean, maize and bengal gram. Results indicated that the samples of maize *sattu* supplemented with soybean (up to 30%) were highly acceptable (Deshpande *et al.* 2004).

Value added wheat based papads were developed by Vasanthi *et al.* (2005) by incorporating different levels of green leafy vegetables viz., *shepu* (*Peucedanum graueolens*) and *kilkeerae* (*Amaranthus tricolour*) in papads. Fresh leaves were incorporated at 15 and 20 per cent levels and dehydrated forms in 5 and 10 per cent levels. *Papads* were prepared using refined wheat flour, cumin seeds, salt and green leafy vegetable. The fried *papads* were subjected to sensory analysis by a panel of 100 members. *Papads* with fresh (15-20 %) and dehydrated greens (5%) scored above 6 on a scale of 10 indicating acceptability of papads incorporated with greens. Expansion volume of *papads* prepared by incorporating fresh greens and dehydrated greens (5%) were satisfactory. Fat uptake of *kilkeerae* papads was similar to that of control *papads* but *shepu* incorporated *papad* showed slightly lower absorption. Mineral, vitamin and fiber content of greens-incorporated *papads* increased remarkably. Acceptability of *papads* interms of physico-chemical characteristics, sensory attributes and nutritional quality suggested suitability of papads incorporated with greens.

Curry leaf *chutney* powder was developed by Balaswamy *et al.* (2006). The spice mix powder was added in two combinations of 1:1 and 1:2 ratios to curry leaf powders prepared by four different treatments. The oil roasted fresh curry leaves and spice mix of 1:1 ratio with 10 (%) salts were found to be highly acceptable organoleptically. Total carotenoids and total chlorophyll content in the *chutney* powder decreased during the progressive storage period. The sensory scores for appearance, color, flavor, taste and overall quality during 0, 30, 60 and 90 days storage period were on par with scores of control sample.

Leena *et al.* (2006) prepared *chakkli* by incorporation of ragi at different levels 5, 15 and 25 per cent and studied fat absorption, sensory and storage parameters. Three sets of products were prepared incorporating untreated; dry heat treated or gelatinized ragi flour. Results indicated that the fat absorbed by the control was 19(%) and ragi flour incorporation (5%) increased fat content to 24(%). Further increased incorporation (15 and 25 %), decreased the fat absorption to 19.7 and 18 per cent, respectively. Incorporation of untreated and dry heat treated ragi flour resulted in slight decline in the sensory ratings of products. The effects were more pronounced with higher level of incorporation. Incorporation of gelatinized ragi flour (5%), significantly improved the texture, flavor and over all quality of products in comparison with the control. It was reported from the results that incorporation of higher amounts of ragi resulted in lower fat uptake but compromised the sensory quality of the product. However, incorporation at the 5(%) level had the opposite effect. Gelatinization as a pretreatment was found to improve the quality of the product.

A ready to serve instant *halwa* powder was developed by Dev raj *et al.* (2007), with potato flour (39.6g), ghee (9.9g), sugar powder (43.6g), cardamom, fennel, coconut and cashew nut as condiments. It was recorded that the product remained stable when packed in polyethylene bags and stored for 6 months at room temperature.

Value added maize *laddu* with full fat soy flour was developed by Bharti and Kumari (2008). *Laddu* was prepared with six different ratios of maize, jaggery and soybean flour viz., 60:40:0; 50:40:10; 40:40:20; 30:40:30; 20:40:40 or 10:40:50, respectively. It was reported that the 30 per cent maize soy flour fortified *laddu* was highly acceptable. The *laddu* provided 23 and 50 per cent protein and energy, respectively recommended for children.

An attempt was made to incorporate horse gram in traditional products by Khatun *et al.* (2009). Six products namely, *laddu*, *papad*, noodles, *hurigalu*, soup mix and gravy were standardized and subjected to storage for a period of two months. Results indicated high acceptability scores for *hurigalu*, *papad*, gravy and noodles. The products could be stored at room temperature up to one month without adversely affecting the sensory quality.

Thus various experiments for value addition and standardization recorded encouraging avenues for industrial application besides maintaining food quality.

2.5 Traditional Convenience Foods in the market and consumer preference

Recent years have witnessed a phenomenal growth in the market demand for traditional foods including breakfast foods, sweet and savory snacks, pickles, chutneys, masala powder, pastes and instant mixes, ready to eat and ready to use foods.

According to an estimate the consumption of traditional food in India is 30 times more than the quantity of processed western style foods like bread, biscuits, jam, ice cream, soft chocolates, and several other junk foods (Rao, 2000). It was reported that Indian snack foods, *papads*, pickles, and others had unique features and with modern scientific packaging and servicing techniques, the traditional foods market could be raised to international standards in terms of shelf life and sensory quality.

Changing life styles and the modified eating habits of India's growing population have propelled its processed food industry (Anonymous, 2009). Frozen and canned foods crept in Indian middle class kitchens also Social changes, increasingly nuclear families, increased women employment and living away from home on work or education are reported to have boosted the processed food industry. Many leading branches were flourishing in the processed food market. Diverse, large scale industries producing more than thousand different types of snack products, 300 types of savorys, potato based snacks, snack nuts and other pulse based savory products were reported in Indian market.

A decline in consumption of traditional foods was reported by Kuhnlein (1989) among native Canadian, Nuxalks of Bella coola, British Colombia. It was indicated that among the 70 food species only 23 were in use. Consumption of convenience foods such as of TV dinners which were bought in stores, and prepared at home by re-heating was studied by Peeter *et. al.*, (1999) among 800 inhabitants of five cities of varying size in central part of the Netherlands. It was reported that the intention to use a TV dinner decreased from 'alone' via "with family" to "with friends", but did not differ between weekdays and weekends. Consumption frequency of TV dinners was higher in households where the person responsible for meal preparation held a paid job, and it was positively related to the number of hours the person was employed.

Martine *et al.* (2004), under took a nationally representative (n=1024) survey in Ireland amongst primary food purchasers in the household to know the Irish convenience food consumer and investigated four convenience food categories: ready meals, take-away meals, restaurant meals and pub meals. Results indicated that the consumption of ready meals and take away meals was most associated with convenience related dimensions. Restaurant and pub meals seemed to be less related to the convenience dimensions. Comparisons of the regression results across the four convenience food categories highlighted the importance of convenience food related lifestyle issues in the purchase of ready meals.

A study to examine dietary behaviors in 504 Australian 18 year-old indicated that convenience foods were the greatest contributors to sodium intake (27% in men, 22% in women) followed by meat, bread and soups and sauces. (Milligan *et.al.*, 2005).

Thamlurkar (2006) reported that most of the consumers prefer the traditional types of food which were fresh and natural without any preservatives or artificial ingredients. Such foods were preferred by working couples, bachelors and those peoples who did not have time, patience or expertise in preparation of traditional foods. He further indicated that people did not prefer instant foods because of the perception of loss of vitamins. He suggested that the food manufacturers to remove this myth from the minds of the people.

Buckley *et al.* (2007) examining the convenience food market in Great Britain studied the key drivers of growth in this market and food consumers attitudes and reported behavior towards convenience foods through segmentation technique. The survey was conducted in a nationally representative sample of 1000 consumers who were primarily responsible for food shopping and cooking in the household. Segmentation analysis, based on the identification of 20 convenience lifestyle factors, identified four convenience food lifestyle segments of consumers such as the 'food connoisseurs' (26%), the 'home meal preparers' (25%), the 'kitchen evaders' (16%) and the 'convenience-seeking grazers' (33%). The study indicated that 'kitchen evaders' and the 'convenience – seeking grazers' were identified as convenience-seeking segments.

Various traditional healthful fermented products such as foods containing probiotic bacteria, black rice vinegar (*kurosui*), soy sauce (*shoyu*), soybean-barley paste (*miso*), natto and tempeh, were reported to be available commercially from the food stores of Japan (Yoshikastu and Mistuo, 2008). The fermented food products were produced by traditional methods exploiting mixed cultures of various non-toxic micro-organisms including lactic acid bacteria, acetic acid bacteria, sake yeast, koji molds and natto bacteria.

Thus the traditional convenience foods were reported to be unique, simple in character, composition and method of preparation besides being cheap and affordable.

3. MATERIAL AND METHODS

The traditional foods give ethnic identity to consumers, besides providing nutritional benefits. Each culture bestows typical foods including the convenience foods. Information on the traditional convenience foods (TCFs) of Karnataka is limited. The present investigation conducted to document the TCFs in different zones of north Karnataka, know the factors influencing preparation of TCFs, ascertain the availability, source and preference of such foods in the market and compute nutrient composition of selected foods is presented in this chapter.

3.1 LOCATION OF THE STUDY

The survey for documentation of TCFs was carried out across four agro-climatic zones viz., forest and hilly, transitional, coastal and dry zones of Karnataka falling under the jurisdiction of UAS Dharwad. Both urban and rural locales of the selected zones were covered. Accordingly the study was conducted in Dharwad, Gokak, Dandeli and Karwar representing urban populations of transitional, dry, hilly and coastal zones, respectively. The villages selected for the survey were Morab and Thirlapur in transitional zone, Akkatangerhal and Ankalagi in dry zone, Pradhani and Pattoli in hilly zone, Binaga, Chandya, Gunagiwada and Haladipur in coastal zone.

3.2 DATA COLLECTION

Information to document the different types of TCFs known and actually prepared, methods of preparation, seasonality, storage and shelf life, modifications if any was collected through household survey and participatory rapid appraisal techniques in both rural and urban locations using structured questionnaire (Appendix I and II). The TCFs sold in the food shops of Dharwad were studied to know the seasonality of purchase, source of procurement, modifications if any, value addition, preference using structured questionnaires (Appendix III).

3.2.1 Household survey

Both urban and rural households belonging to middle income groups were randomly selected from the four zones for data collection. A total of 240 households, 30 each from rural and urban areas of each zone were personally visited to collect the information. General information about the family, income, land holdings and crops grown, food habits, habitual foods, knowledge about TCFs known and prepared, seasonality of preparation, storage, uses and health benefits were collected by personal interview method. The details of preparatory protocols including the modification in terms of use of ingredients or methods of preparation were also understood. The TCFs purchased from the market, frequency of purchase and preference were also recorded.

3.2.2 Participatory rural appraisal technique (PRA)

The participatory rural appraisal technique (PRA) was employed to appraise the information about the TCFs from the populations not covered in the household survey. The PRA was also carried out to substantiate the information generated from the household survey. PRA was employed in each zone both in urban and rural areas. PRA was conducted three times each in urban locations of each zone (in areas where the house hold survey was conducted). In rural locations the PRA was conducted in three villages of each zone to give complete zonal information. Accordingly PRA in rural areas was conducted in Mugad, Hanumanahalli and Amminbhavi of transitional zone; Suldal, Paschapur and Madawal of dry zone; Amminalli, Hattaragi and Kanalli of hilly zone and Kudavalli, Baggon and Konare of coastal zone.

A group of 15-20 women representing the community were assembled in community halls, schools or *anganwadi* centres during holidays leisurely at free times. The information was collected by participatory discussions with the representatives and the data was recorded using a questionnaire. The information about TCFs known to them, seasonality, preparatory protocol, storage and shelf life, modifications if any were elicited. The investigator acted as a moderator during the appraisal.

3.2.3 Market survey

All the food outlets selling convenience foods including the TCFs were visited to collect the information using a structured questionnaire (Appendix III). Information on consumers, seasonality, preference, modification, source of TCFs were recorded.

3.3 NUTRIENT COMPUTATION

Nutrient composition of selected fast running traditional convenience foods was standardized and computed using Annapurna software (designed by Dr. M. R. Chandrashekar, Bangalore). The nutritive value of each recipe was expressed per 100g and per serving.

3.4 STATISTICAL ANALYSIS

The documented data of different regions of Karnataka and from market is expressed in frequency and percentage. The data pertaining to factors influencing preparation of traditional convenience food was analyzed using contingency co- efficient as a measure of degree of association between two attributes in contingency table using the formula

$$r_c = \pm \sqrt{\frac{S - N}{N}}$$

Where, r_c – Contingency co- efficient

N = Total number of observations

S – Sum of quotients i.e., $S = \sum O_{ij}^2 / E_{ij}$

O_{ij} – Observe the frequency of ij^{th} cell

E_{ij} – Expected frequency of ij^{th} cell

$E_{ij} = R_i \times C_j / N$

4. RESULTS

The results of the study conducted to document the traditional convenience foods (TCFs) of different zones under the jurisdiction of UAS, Dharwad are presented in this chapter.

4.1. Demographic profile of the respondents

Background information on the selected respondents of rural and urban areas of different zones is presented in Table 1. The survey revealed that in the rural transitional zone, maximum percentage of respondents were primary educated (50) and least percentage were graduates (13.3). However among urban respondents majority had high school education, followed by graduates (23.3%) and education up to primary school (20.0%). There were no illiterate respondents in the zone. In the dry zone, among the rural respondents, majority of them received high school education (46.7%) followed by the primary school educated respondents (30.0%). However among the urban respondents majority were graduates (36.7%), followed by primary school attended respondents (30.0%). Majority of the respondents in the rural and urban areas of hilly zones had education up to primary schools (53.3 and 50.0%, respectively). Illiterate (20.0 and 10.0%, respectively in rural and urban) and high school attended respondents (20.0 and 33.3%, respectively) were also contacted for the survey. In case of coastal zone majority of the respondents were high school educated both in rural (50.0%) and urban (53.3%) locales.

Among the rural respondents, majority were educated up to primary school (39.2%), followed by high school educated (38.3%). Almost equal percentage of respondents were illiterate (11.7%) and graduates (10.8%). In the urban location, majority of respondents were high school educated (41.7%), followed by education up to primary school (30.8%).

With regard to age of the respondents, majority of them were in the age range of 40-60 years, across the four zones except in urban groups of dry and hilly zones where the majority were between 20-40 years.

With regard to occupation, majority of the respondents in all the zones were not gainfully employed (89.2%). However, among the urban respondents, very less percentage of respondents (3-4%) were engaged in occupation away from homes.

The respondents owning the lands were observed in all the zones, except in urban coastal and hilly zones. A total of 87.5 per cent in rural and 33.3 per cent in urban zones were land owners. Majority of landless respondents belonged to urban communities of hilly (96.7%) and coastal zones (86.7%). Respondents belonging to transitional and dry zones owned both dry and irrigated lands, where as the hilly, coastal respondents owned only irrigated lands.

With respect to crops grown in different zones of Karnataka, it was observed that the cereals, pulses, vegetables and cash crops were grown in transitional and dry zone, where as the fruits grown in transitional were sapota, mango, and banana. In the dry zone the fruits grown by the respondents were pomogranate, banana, grapes, sapota, fig, mango and water melon. The crops grown in hilly and coastal region were similar (spices, cashewnut, coconut, arecnut, paddy, pulses, bettle leaves, and fruits like banana, mango, jackfruit, sapota, guava and cashew fruit).

The survey revealed that maximum percentage of both rural (60.0%) and urban (69.2%) respondents were residing in nuclear families, followed by those residing in extended (30.8 and 25.0%, respectively) and joint families (9.2 and 5.8%, respectively) in rural and urban location. Majority of the respondents lived together as single generation families (65.8 and 79.2%) in rural and urban location respectively. Similar trend was evident across the zones. Only in one family three generations lived together (rural transitional zone).

With respect to family size majority of both rural and urban respondents (48.3 and 62.5%) had small size families (up to 4 members), followed by medium size (5 to 7 members) in 41.7 and 35.0 per cent, respectively in rural and urban areas. Large families with more than eight members were very few (10% in rural, 2.5% in urban areas). Almost equal percentage of respondents lived in small and medium families across the zones.

Table 1. Background information about the respondents of different zones of Karnataka

Sl. No.	Variables	Transitional zones		Dry zones		Hilly zones		Coastal zones		Total zones	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
I. Education level	Illiterate	-	-	2 (6.7)	3 (10.0)	6(20.0)	3(10.0)	6(20.0)	-	14 (11.7)	6 (5.0)
	Primary	15 (50.0)	6 (20.0)	9 (30.0)	9 (30.0)	16(53.3)	15(50.0)	7(23.3)	7(23.3)	47 (39.2)	37 (30.8)
	High school	11 (36.7)	17(56.7)	14 (46.7)	7 (23.3)	6 (20.0)	10(33.3)	15(50.0)	16(53.3)	46 (38.3)	50 (41.7)
	Graduates	4 (13.3)	7(23.3)	5 (16.7)	11(36.7)	2 (6.7)	2(6.7)	2(6.7)	7(23.3)	13 (10.8)	27 (22.5)
II. Age (years)	20 – 40	13 (43.3)	13(43.3)	13 (43.3)	13(43.3)	8 26.7)	18(60.0)	4(13.3)	8 (26.7)	38 (31.7)	52 (43.3)
	40 – 60	14 (46.7)	16(53.3)	16 (53.3)	11(36.7)	16 (53.3)	9(30.0)	18(60.0)	14 (46.7)	64 (53.3)	50 (41.7)
	> 60	3 (10.0)	1(3.3)	1 (3.3)	6 (20.0)	6 (20.0)	3(10.0)	8(26.7)	8 (26.7)	18 (15.0)	18 (15.0)
III. Occupation	Housewife	30(100.0)	27(90.0)	30(100.0)	26(86.7)	30(100.0)	27(90.0)	29(96.7)	27(90.0)	119(99.2)	107(89.2)
	Employed	-	3(10.0)	-	4 (13.3)	-	3(10.0)	1(03.3)	3 (10.0)	1 (00.8)	13 (10.8)
IV. Total land owners	-	22 (73.3)	17 (56.7)	29 (96.7)	18 (60.0)	27 (90.0)	1 (3.3)	27 (90.0)	4 (13.3)	105(87.5)	40 (33.3)
Dry land (acre)	<3.2	9 (30.0)	5 (16.7)	3 (10.0)	1 (3.3)	-	-	-	-	12 (10.0)	6 (5.0)
	3.1to7.2	1 (3.3)	3 (10.0)	5 (16.7)	1 (3.3)	-	-	-	-	6 (5.0)	4 (3.3)
	> 7.2	12 (40.0)	7 (23.3)	-	2 (6.1)	-	-	-	-	12 (10.0)	9 (7.1)
Irrigated land (acre)	<3.2	2 (6.7)	3 (10.0)	6 (20.0)	1 (3.3)	17 (56.7)	1 (3.3)	23(76.7)	4(13.3)	48 (40.0)	9 (7.5)
	3.1to7.2	-	3 (10.0)	7 (23.3)	7 (23.3)	9 (30.0)	-	4 (13.3)	-	20 (16.7)	10 (8.3)
	> 7.2	2 (6.1)	2 (6.1)	15 (50.0)	7 (23.3)	1 (3.3)	-	-	-	18 (15.0)	9 (7.1)
Landless	-	8 (26.7)	13(43.3)	1 (3.3)	12(40.0)	3 (10.0)	29(96.7)	3 (10.0)	2 (86.7)	15 (12.5)	80 (66.7)
V. Crops grown		Jowar, wheat, paddy, safflower, chilli, potato, onion, pulses, maize, vegetables, groundnut, millets, sapota, mango, banana, guava, tobacco, sugarcane and cotton		Jowar, wheat, safflower, chilli, onion, pulses, maize, vegetables, millets, groundnut, sugarcane, tobacco, sunflower, cotton, pomegranate, grapes, sapota, banana, fig, mango and water melon.		Spices, coconut, arecnut, paddy, ragi, pulses, groundnut, cashew nut, banana, mango, jackfruit, sapota, guava, cashew fruit, papaya and bettle leaves		Paddy, arecnut, coconut, spices, bettle leaves, pulses, groundnut, cashew nut, banana, jackfruit, sapota, mango, cashew fruit, papaya and guava			

Table 1. (Continued)

Sl. No.	Variables	Transitional		Dry		Hilly		Coastal		Total	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
VI. Family type	Nuclear	17 (56.7)	20 (66.7)	21 (70.0)	20 (66.7)	16 (53.3)	23(76.7)	18(60.0)	20 (66.7)	72 (60.0)	83 (69.2)
	Joint	5 (16.7)	3(10.0)	2 (6.7)	1 (3.3)	1 (3.3)	1(3.3)	3(10.0)	2 (6.7)	11 (9.2)	7 (5.8)
	Extended	8 (26.7)	7(23.3)	7 (23.3)	6 (20.0)	13 (43.3)	6(20.0)	9(30.0)	8 (26.7)	37 (30.8)	30 (25.0)
VII. Generations living together	One	17 (56.7)	22(73.3)	23 (76.7)	20 (66.7)	18 (60.0)	23(76.7)	21(70.0)	30(100.0)	79 (65.8)	95 (79.2)
	Two	12 (40.0)	8(26.7)	7 (23.3)	10 (33.3)	12 (40.0)	7(23.3)	9(30.0)	-	41 (34.2)	25 (20.8)
	Three	1 (3.3)	-	-	-	-	-	-	-	1 (0.8)	-
VIII. Family size	Up to 4	14 (46.7)	17 (56.7)	15 (50.0)	17 (56.7)	14 (46.7)	16(53.3)	15(50.0)	25 (83.3)	58 (48.3)	75 (62.5)
	5 to 7	12 (40.0)	13(43.3)	12 (40.0)	11 (36.7)	15 (50.0)	13(43.3)	11(36.7)	5 (16.7)	50 (41.7)	42 (35.0)
	8 and above	4 (13.3)	-	3 (10.0)	2 (6.7)	1 (3.3)	1(3.3)	4(13.3)	-	12 (10.0)	3 (2.5)
IX. Children	Nil	10 (33.3)	10(33.3)	13 (43.3)	11 (39.7)	12 (40.0)	5(16.7)	18(60.0)	19 (63.3)	53 (44.2)	45 (37.5)
	Up to 4	18 (60.0)	20(66.7)	16 (53.3)	19 (63.3)	17 (56.7)	24(80.0)	12(40.0)	11 (36.7)	63 (52.5)	74 (61.2)
	> 4	2 (6.7)	-	1 (3.3)	-	1 (3.3)	1(3.3)	-	-	4 (3.3)	1 (0.8)
X. Food Habits	Vegetarian	30(100.0)	19(63.3)	30(100.0)	30(100.0)	7 (23.3)	18(60.0)	12(40.0)	29 (96.7)	79 (65.8)	96 (80.0)
	Non-vegetarian	-	11(36.7)	-	-	23 (76.7)	12(40.0)	18(60.0)	1 (3.3)	41 (34.2)	24 (20.0)
XI. Source of information about the TCFs	Elders of the family	30(100.0)	30(100.0)	30(100.0)	30(100.0)	30(100.0)	30(100.0)	30(100.0)	30(100.0)	120(100.0)	120(100.0)
	Relatives	30(100.0)	30(100.0)	30(100.0)	13(43.3)	30(100.0)	29(96.7)	30(100.0)	28(93.3)	120(100.0)	100 (83.3)
	Neighbors	-	8(26.7)	-	-	-	-	-	-	-	8(26.7)
	Television	9(80.0)	-	-	-	-	-	-	-	9(80.0)	-

Figures in parenthesis indicate per cent values

The per cent families with children less than 18 years were 52.5 and 61.2 in rural and urban location, respectively. However, negligible percent families had more than four children aged less than 18 years (3.3% and 0.8% in rural and urban areas, respectively).

With respect to food habits majority of the families both rural (65.8%) and urban (80.0%) were vegetarians; and non vegetarians were 34.2% in rural and 20.0% in urban locations. Among the different zones, all the respondents of dry zones and transitional rural were vegetarians, where as majority of urban families in hilly (60.0%) and coastal (96.7%) were vegetarians. The source of information about TCFs was from the elders of family or relation.

4.2. Traditional convenience foods of different zones of Karnataka

The TCFs of different zones of Karnataka are presented in Table 2. Among the total of 162 TCFs documented across the regions, 106 were categorized as ready-to-eat and 56 were ready-to-use TCFs. The foods were prepared from different ingredients such as cereals, pulses, oilseeds, vegetables, fruits, sugar and jaggery and animal based foods. Highest numbers of TCFs (60) were documented from cereal group, among which 32 were ready-to-use foods. Maximum number of ready-to-eat sweets (21) were documented, followed by nine savory snacks and two main foods. In the ready-to-use category totally 19 cereal based farina and flours and nine *papads* and *sandiges* were documented. A total of 20 pulse based TCFs were documented, among which 12 were ready-to-eat and eight were ready-to-use foods were reported. Totally nine sweets, two savory items and a *chutney* powder were observed in the category. In the ready-to-use category four different types of *papads* and *sandiges*, three types of flours and a savory food accompaniments was indicated.

A total of 20 oilseed based TCFs were reported across the zones, among which 17 were ready-to-eat and three were ready-to-use foods. In the ready-to-eat category maximum number were sweets (12) followed by *chutney* powders (5), where as in the ready-to-use foods three thickeners and taste enhancers were documented. About two types of *chutney* powders were prepared using spices. A total of 27 vegetable based TCFs were reported, among which 18 ready-to-eat and nine ready-to-use were documented. The products documented from other vegetables were 15, of which *chutney*, pickles and *karindi* (11) and one sweet among the ready-to-eat and dehydrated products (2) and a *sandige* in the ready-to-use were documented across the zones. Roots, tubers and leafy vegetables could be processed as *chutneys*, *chutney* powders, pickles, *papads*, chips, dehydrated products and *sandiges*.

A total of 20 fruit based TCFs were documented, among which 16 were ready-to-eat and four were ready-to-use. Among ready-to-eat more number of pickles and pickle like products (10) were prepared. Sweets such as jackfruit *burfi*, *sata* and banana halwa were documented. Among ready-to-use, a jackfruit *papad* and *kadle huli*, *vate huli* and *chapane mavu* were the three acidulants documented across the regions. *Kakavi* a product procured from a jaggery making unit was used as TCFs. Milk based TCFs in the form of sweet pedha, *kunda* and *ginnadawadi* were documented among ready-to-eat category.

Among the nine fish and meat based TCFs, three were ready-to-eat and five were ready-to-use in the form of savory food, pickles, *chutney*, *chutney* powder or dried products.

Thus it was observed that ready-to-eat TCFs were documented more (106) followed by ready-to-use TCFs (56).

Table 3 shows the traditional convenience foods (TCFs) of different regions of Karnataka. The foods included ready-to-eat and ready-to-use TCFs prepared from different ingredients. Among 106 ready-to-eat TCFs, 50 sweet items were documented, which included *laddus* (16), *holiges* (8), *burfis* (4), *chikkis* (2) and other desserts (20). The savory items (54) included 13 different varieties of snacks like *chivdas* (5), *kodbale*, *nippattu*, *chakkalis* (2), *akki wadi*, *sev* and chips (2). Among the 41 savory food accompaniments included *chutney* powders (10), pickles and like products (29) and *chutney* and side dishes (chicken and fish fry).

A total of 56 ready-to-use TCFs were documented across the four zones; which included flours, farina and traditional pastas (22), different types of *papads* (9), *sandiges* (8) and chips (2). Other ready-to-use food ingredients used as convenient foods such as

Table 2. Classification of traditional convenience foods according to food groups

Group	Ready to eat	Number	Ready to use	Number	Total
Cereals	Main course	2	Farina and flours	19	60
	Sweets	21	<i>Papads and sandiges</i>	9	
	Savory	9			
Total		32	Total	28	
Pulses	Sweets	9	<i>Papads and sandiges</i>	4	20
	Savory	2	Flours	3	
	<i>Chutney powder</i>	1	Savory	1	
Total		12	Total	8	
Oil seeds	Sweets	12	Thickeners, taste enhancers	3	20
	<i>Chutney powders</i>	5			
Total		17	Total	3	
Spices	<i>Chutney powders</i>	2	-	-	2
Roots and tubers	<i>Chutney</i>	1	<i>Papads</i> and chips	3	7
	Pickles	3			
Leafy	<i>Chutney</i>	1	Dehydrated	3	5
	<i>Chutney powder</i>	1			
Other Vegetables	Sweet	1	<i>Sandige</i>	1	15
	<i>Chutney, pickles, and karindi</i>	11	Dehydrated	2	
Vegetables Total		18	Total	9	27
Fruits	Sweets	3	<i>Papad</i>	1	20
	Pickles and alike	10	Acidulants	3	
	Dehydrated	3			
Total		16	Total	4	
Sugar/Jaggery	<i>Kakavi</i>	1	-	-	1
Milk	Sweets	3	-	-	3
Fish and Meat	Savory	2	Fish powder	1	9
	Pickle, <i>Chutney</i>	2	Dried fish	1	
	<i>Chutney powder</i>	1	Dried meat	2	
Total		5	Total	4	
Grand Total		106		56	162

Table 3. Different traditional convenience foods of Karnataka

Type		Traditional convenience foods	Total
Ready to eat foods			
Main course	<i>Rotis</i>	Crisp jowar and bajra <i>rotis</i>	2
Sweets	Snacks	<i>Laddus, holiges, jilebi, shankarpali, madli, balushahi, halpi, karachikai, atirasa, bola guli, mysorepak, panchakajjayas, akki kajjaya, chikkis, burfis, kumbal garagi, banana halwa, sata, kakavi, pedha, kunda and ginnada wadi</i>	50
Savory	Snacks	<i>Chivdas, kodbale, nippattu, chakkalis, akki wadi, sev and chips</i>	13
	Accompaniments	<i>Chutney powders, pickles /alike and chutney</i> Side dishes :chicken and fish fry	41
Total			106
Ready- to- use			
Farina including pasta		Semolina, pasta and flours	22
		<i>Papads</i>	9
		<i>Sandiges</i> and chips	10
		Thickeners	3
		Acidulants	3
		Dehydrated vegetables	5
Others		Salted fish, fish powder, chicken and mutton chunks	4
Total			56



Plate.1. Some ready to use traditional pasta



Plate.2. Fruits dried as acidulants



Plate.3. Holiges-traditional sweet convenience foods

Table 4. *Laddus* of Karnataka, method of preparation and shelf life

Product	Main ingredient	Method of preparation	Shelf life (weeks)
Cereals based (7)			
<i>Tambittu</i>	Foxtail millet	Flour, bound with jaggery syrup	Two
<i>Rava</i>	Fine semolina	Roasted semolina, bound with sugar syrup	Four
<i>Godhi</i>	Wheat flour	Roasted flour, bound with sugar / jaggery	Four
<i>Maida</i>	Refined flour	Roasted flour, bound with sugar	Four
<i>Gulladaki</i>	Wheat	Gluten extracted, fried, bound with jaggery syrup	Four
<i>Rajgiri</i>	Grain amaranths	Popped grain, bound with jaggery syrup	Four
<i>Churmuri</i>	Puffed rice	Bound with jaggery syrup	Four
Pulse based (5)			
<i>Boondi</i>	Chick pea dhal flour	Batter fried into drops, bound with sugar syrup	Two
<i>Ladagi</i>	Chick pea dhal flour	Batter fried into drops, bound with jaggery syrup	Four
<i>Besan</i>	Chick pea dhal flour	Flour roasted with ghee, bound with sugar	Four
<i>Sev</i>	Chick pea dhal flour	Sev bound with jaggery	Four
<i>Hesarunde</i>	Green gram dhal flour	Roasted grain flour bound with ghee and jaggery	Four
Oilseed based (4)			
<i>Shenga</i>	Groundnut	Roasted groundnut bound with jaggery syrup	Eight
<i>Yellu</i>	Sesame	Roasted sesame bound with jaggery	Eight
<i>Kobbari</i>	Copra	Grated copra bound with jaggery	Two
<i>Antinunde</i>	Nuts and dry fruits	Nuts and fruits bound with jaggery	Four

thickeners and taste enhancers (groundnut, niger and sesame) prepared from pulses or oilseeds were in culinary practice. Several acidulants which could be used in cuisines such as *kadle huli*, *vate huli* and *chapane mavu* were found by the survey. Several dehydrated products such as dry leaves of chickpea, fenugreek and curry leaves, cluster beans and stuffed chillies were reported to be used as convenience foods in different zones. Salted fish, fish powder, mutton and chicken chunks were some of the animal based ready-to-use TCFs.

Thus among the ready-to-eat TCFs documented (106), maximum were savory TCFs (52), where as among the ready-to-use TCFs (56), farina including traditional pasta (19) were maximum.

Different types of sweets documented across the regions included *laddus*, *holiges* and other desserts. The detailed information of different types of *laddus*, method of preparation and shelf life is depicted in Table 4.

Different types of *laddus* prepared from cereals/pulses/ oilseed were documented in the four zones. The variety of *laddus* prepared from cereals was highest (7), followed by oilseeds and pulses (4 each).

Laddus were prepared using different ingredients and method of preparation, like milling / roasting and binding with sugar or jaggery syrup in most of the *laddus*. Typical *laddus* included *gulladaki* and *rajgiri laddus*. *Gulladaki laddu*, though it is prepared from wheat, by extracting gluten from soaked and ground wheat, then fried making into small balls. These balls are bound with jaggery syrup. *Rajgiri laddu* is prepared using grain amaranths by popping it and binding with jaggery. *Laddus* like *boondi* and *sev* were prepared with *sev* and fried *boondi* drops from bengal gram flour which were later bound with sugar/ jaggery.

Oilseed based *laddus* were documented as TCFs across the regions. Groundnut, sesame, dry coconut and several condiments were used. *Antinunde* is one such *laddu*, where the gum (bark exudate of *Acacia* tree) crystals along with several dry fruits and nuts are bound with jaggery syrup after frying in ghee.

With regard to shelf life of TCFs, maximum shelf life of 8 weeks was reported with *shenga* and *yellu laddu*. Minimum 2 weeks shelf life was reported in *tambittu* and *kobbari laddu*. Remaining *laddus* were reported to exhibit an average shelf life of about four weeks. Thus the oilseed based *laddus* had maximum shelf life compared to other *laddus*.

Stuffed sweet pancakes (*holiges*) of Karnataka, their method of preparation and shelf life are depicted in Table 5. Eight different types of *holiges* were found to be prepared from five different cereals and three types of oilseeds. Different methods and ingredients with combinations were employed in *holige* preparation. *Surali holige* was prepared by thinly rolling refined wheat flour dough, lining with sugar powder and condiments and was dry baked. Where as *hurakki holige* was a stuffed fried pancake prepared with foxtail millet and jaggery stuffing. *Bellada*, *sakkari* and *rava holiges* were also fried stuffed pancakes prepared by stuffing jaggery, sugar and semolina, respectively. In *bellada holige*, only jaggery was used for stuffing, where as *sakkari holige* a mixture of sugar, refined flour, curds and banana were the stuffing materials.

Oilseed based *holiges* were prepared with stuffing groundnut, sesame and copra with jaggery respectively. The ingredients were roasted, powdered, mixed with jaggery and used as stuffing with wheat flour dough, rolled into small circular discs and baked.

The *holiges* could be stored up to four weeks, while *bellada*, *sakkari* and *kobbari holige* could be stored for two weeks. Thus it was observed that all the cereal based *holiges* prepared were unique and of region specific.

The different other sweets of Karnataka are presented in Table 6. It was observed that majority of the desserts were prepared with cereals (9) followed by pulse and oilseeds (4 each), fruits and milk (3 each). Least variety of desserts were prepared with vegetables and sugar (one each).

Combinations of different methods and ingredients were employed in preparation of desserts. Among the nine cereal based desserts five were prepared by deep fat frying. *Jilebi* was prepared by deep fat frying the batter of refined flour and immersing into sugar syrup. *Shankarpali* was prepared with dough of refined flour and sugar powder, rolled into thick

Table 5. *Holige* (stuffed sweet pancakes) of Karnataka, method of preparation and shelf life

Product	Main ingredient	Method of preparation	Shelf life (weeks)
Cereal based (5)			
<i>Surali</i>	Refined flour, sugar	Dough thinly rolled, lined with sugar powder and condiments, folded in to longitudinal strips and baked on a hot <i>tawa</i> to dryness by pressing with a dry soft cloth, without application of fats	Four
<i>Hurakki</i>	Foxtail millet flour, refined flour	Flour mixed with jaggery, stuffed in between dough, rolled in to elongated discs and deep fat fried	Four
<i>Bellada</i>	Wheat flour, jaggery	Jaggery is finely powdered to smooth paste like consistency, stuffed in between dough, rolled like <i>puris</i> and deep fat fried	Two
<i>Sakkari</i>	Refined flour, sugar	Mixture of powdered sugar, refined flour, banana and curds is stuffed in between wheat flour dough, rolled, deep fat fried	Two
<i>Rava</i>	Refined semolina and flour, sugar	<i>Rava</i> mixed with jaggery, stuffed in between refined flour dough, rolled and deep fat fried	Four
Oilseed based (3)			
<i>Shenga</i>	Groundnut, wheat flour	Mixture of roasted groundnut powder and jaggery stuffed in between wheat flour dough, rolled, baked	Four
<i>Yellu</i>	Sesame, wheat flour	Mixture of roasted sesame powder and jaggery stuffed in between wheat flour dough, rolled, baked	Four
<i>Kobbari</i>	Coconut, wheat flour	Mixture of coconut powder and jaggery stuffed in between wheat flour dough, rolled, baked	Two

Table 6. Other sweets of Karnataka, method of preparation and shelf life

Product	Main ingredient	Method of Preparation	Shelf life (Weeks)
Cereal based (9)			
<i>Jilebi</i>	Refined flour	Batter deep fat fried, immersed in syrup	One
<i>Shankarpali</i>	Refined flour	Deep fat fried	Four
<i>Balushahi</i>	Refined flour	Deep fat fried and dipped in sugar/ jaggery syrup	Two
<i>Karchikai</i>	Refined flour, copra, sesame, puffed bengal gram dhal flour	Stuffing filled in layers of <i>maida</i> , deep fat fried	Four
<i>Madli</i>	Wheat flour, semolina	Thick <i>chapatis</i> baked, pounded with jaggery and condiments	Four
<i>Atirasa</i>	Rice flour	Dough made adding jaggery, fermented for one day rolled, deep fat fried	Four
<i>Akki kajjaya</i>	Rice flour	Flour roasted with ghee and mixed with sugar syrup and condiments	Four
<i>Bola gulli</i>	Ragi flour	Flour mixed with jaggery syrup and dried	Twelve
<i>Panchakajjaya</i>	Rice flakes	Rice flakes powdered mixed with jaggery and ghee	Five
Pulse based (4)			
<i>Mysorepak</i>	Chick pea dhal flour	Roasted with ghee and sugar	Four
<i>Panchakajjaya</i>	Green gram dhal	Roasted, milled to grits, sugar/ jaggery and ghee added	Five
<i>Kadale panchakajjaya</i>	Chick pea dhal	Roasted, milled to grits, sugar/ jaggery and ghee added	Five
<i>Halpi/ putani kardantu</i>	Roasted chick pea dhal flour	Flour, added to sugar/ jaggery syrup and concentrated	Four

Table 6. (Continued)

Product	Main ingredient	Method of Preparation	Shelf life (Weeks)
Oilseed based (5)			
<i>Chikkis</i>	Ground nut / Sesame	Roasted, bound with sugar/ jaggery syrup	Eight-Twelve
<i>Burfis</i>	Coconut / cashewnut / garden cress seed	Roasted, powdered and concentrated with sugar	Four
Vegetable based (1)			
<i>Kumbal garagi</i>	Wheat flour, pumpkin	Grated pumpkin, mixed with jaggery and fried in small balls	Four
Fruits based (3)			
Jackfruit <i>burfi</i>	Jackfruit	Sugared paste, cooked to concentration	One
Banana <i>halwa</i>	Banana	Paste cooked with sugar to concentration	one
<i>Sata</i>	Jackfruit	Pasting and drying	Twenty four
Sugar based (1)			
<i>Kakavi</i>	Sugarcane juice	Procured from jaggery making units	Four – Eight
Milk based (3)			
<i>Pedha</i>	Milk	Cooked to concentrate	Two
<i>Kunda</i>	Milk	Cooked to concentrate	Two
<i>Ginnadawadi/ kobbari susla</i>	Colostrums	Sugar/ jaggery added, boiled in water both	Four

chapati like, cut into small diagonal shapes and deep fat fried. *Balushahi* was also prepared with refined flour which was deep fat fried and dipped in sugar / jaggery syrup, where as *karchikai* was prepared by rolling the refined flour dough into small oval shape, stuffing filled with the mixture of copra, sesame, puffed bengal gram dhal flour, sugar / jaggery, and deep fat fried.

Atirasa was prepared with rice flour dough and jaggery, fermented for a day and rolled into small circular discs and deep fat fried. *Akki kajjaya* was prepared with rice flour roasted with ghee and mixed with sugar and condiments. Rice flakes were used as a base ingredient in preparation of *panchakajjaya*, where it was powdered and mixed with jaggery and ghee. *Madeli* a typical familiar other sweet documented across all the zones was prepared using wheat flour and semolina, rolled into thick *chapatis*, baked and powdered with jaggery and condiments. Another unique dessert *bola gulli* was prepared with ragi flour, mixed with jaggery syrup and dried.

The four desserts documented under pulse group were prepared using bengal gram / puffed bengal gram / green gram dhal flour. *Mysorepak* was prepared by roasting bengal gram dhal flour with ghee and then adding sugar. *Panchakajjaya* of two types were documented where in bengal gram dhal and green gram dhal were roasted and milled to grits, mixed with sugar / jaggery and ghee. *Halpi* or *putani karadantu* was prepared using puffed bengal gram dhal flour and concentrated with sugar / jaggery syrup.

Chikkis and *burfis* were the two types of oilseed based desserts documented. *Chikkis* were prepared with groundnut / sesame, roasted and bound with sugar / jaggery syrup; where as *burfis* were prepared using coconut / cashewnut, roasted to aroma, powdered and concentrated with sugar. *Kumbal garagi* was the vegetable based sweet prepared by frying, where in grated pumpkin and jaggery were used.

Jackfruit *burfi* and banana *halwa* were prepared by pasting jackfruit and banana and cooking with sugar until concentrated. *Sata* was prepared from soft variety of jackfruit; a paste was made and sun dried.

Kakavi was a ready-to-eat TCF which was gathered from jaggery making units. *Pedha*, *kunda* and *ginnadawadi* / *kobbari susla* were three milk based sweets documented across the regions. *Pedha* and *kunda* were prepared by condensing the milk and concentrating with sugar; where as *ginnadawadi* was prepared by dissolving sugar / jaggery in *colostrum* of cows / buffaloes and simmered in water bath till coagulated.

With regard to shelf life of other sweets, *sata* reported to have highest shelf life (24 weeks), followed by *bola gulli* (12 weeks), *chikkis* (8-12 weeks) and *kakavi* (4-8 weeks). Least was reported with jackfruit *burfi*, banana *halwa* and *jilebi* a dessert of cereal group (1 week). Remaining desserts were reported to exhibit a shelf life between two to five weeks.

Thus the desserts like *atirasa*, *madli*, *bola gulli*, *akki kajjaya*, *panchakajjayas*, *halpi* / *putani karadantu*, *kumbal garagi*, *banana halwa*, *jackfruit burfi*, *sata*, *kakavi* and *ginnadawadi* / *kobbari susla* were the typical, unique and region specific sweet TCFs.

Methods of preparation and shelf life of ready-to-eat savory major TCFs, is depicted in Table 7. Among the cereal based TCFs documented main course foods i.e., *rotis* were crisp jowar / bajra *roti*, prepared by pan baking with shelf life of eight weeks. The different types of snacks (12) documented were *chivdas* (rice flakes, puffed rice, *menthe* rice flakes and *murmuri* and sago) prepared by seasoning with spices and had shelf life of four weeks. *Kodbale*, *nippattu* and *chakkali* were deep fat fried, having a shelf life of two weeks. *Akki wadi* was also a deep fat fried product although with a shelf life of eight weeks.

Among the pulse based savory main TCFs, *chakkali* and *sev* (2) were the fried snacks documented, having shelf life of three weeks. Jackfruit and banana *chips* were fruit based fried snacks exhibiting four weeks of shelf life.

Chicken and fish fries were the two side dishes documented where the former was deep fat fried and the latter shallow fried. These foods were reported to exhibit a shelf life of one week.

Thus it was observed that among the snacks *murmuri chivda* and *akki wadi* were the unique savory TCFs prepared.

Table 7. Ready-to-eat major savory traditional convenience foods

Type	Product	Main ingredient	Method of preparation	Shelf life (Weeks)
Cereal (11)				
Main course	Crisp jowar <i>roti</i>	Jowar flour	Conduction baking	Eight
	Crisp bajra <i>roti</i>	Bajra flour		Eight
Snacks	Rice flakes <i>chivda</i>	Rice flakes	Seasoned with spices	Four
	Puffed rice <i>chivda</i>	Puffed rice		Four
	Sago <i>chivda</i>	Puffed sago		Four
	<i>Murmuri chivda</i>	Toasted rice flakes		Four
	<i>Menthe hittina chivda</i>	Rice flakes and fenugreek seeds powder		Two
	<i>Kodbale</i>	Semolina, refined flour	Deep fat fried	Two
	<i>Nippattu</i>	Rice flour		Two
	<i>Chakkali</i>	Rice flour		Two
	<i>Akki wadi</i>	Rice		Eight
Pulse (2)				
Snacks	<i>Chakkali</i>	Chick pea dhal flour	Deep fat fried	Three
	<i>Sev</i>	Chick pea dhal flour		Three
Fruit (2)				
Snacks	Jackfruit chips	Unripe mature jackfruit	Deep fat fried	Four
	Banana chips	Unripe, mature banana		Four
Poultry and fish (2)				
Side dishes	Chicken fry	Chicken	Deep fat fried	One
	Fish fry	Fish	Shallow fried	One

Table 8. Traditional ready-to-eat savory food accompaniments

Product	Main ingredient	Method	Shelf life(months)
<i>Chutney</i> powders (10)	Puffed chick pea dhal, niger, ground nuts, linseed and sesame	Roasted and pounded with spices	One
	Copra and fenugreek seeds		Three weeks
	Curry leaves	Dried ground with spices	One
	Prawn		Six
	Pepper, fenugreek seeds	Roasted and pounded	One
<i>Chutneys</i> (5)	Fish	Roasted and pounded with spices	Two weeks
	Garlic	Ground with spices	One
	Red chillies		One
	<i>Ranjaka</i>	Ripe chillies ground with spices	Three
	Mesta	Mesta leaves, roasted, ground with spices	One
Pickles and alike (22)	Garlic, ginger, <i>mangani beru</i> , chillies, bitter gourd, mixed vegetables, amla, drumstick, tender bamboo, <i>mekkikai</i> , tomato, brinjal, lemon, mango, <i>midigai</i> , citron, <i>karonda</i> , <i>karl kai</i> and <i>amate kai</i>	Individual ingredients/ vegetables/fruit are diced, salted with or without spices and fermented	More than one year
	<i>Karindi</i>	Cucumber, carrot cut into strips, kept in sun in a mud pot, allowed to ferment	Six
	Tamarind <i>tokku</i>	Tamarind ground with spices to a paste	One year
	Salted jackfruit	Tender jackfruit salted	One year
Dehydrated (1)	Amla pieces	Salted and dried	One year

Table 9. Ready-to-use traditional convenience foods of Karnataka

Sl no	Type	Group	Product
1	Farina including traditional pasta (13)	Cereals	<i>Angikasi, anekallu, gulagi, gauli, paradi, ugarattu, souti beeja</i> , wheat / rice vermicelli; wheat/ jowar / maize semolina including fine and coarse types
2	Flours (9)	Cereal	Jowar, wheat, foxtail millet flour, bajra, rice and <i>pitti</i> flour
		Pulse	Chick pea dhal, <i>hurali sangati</i> flour and <i>zunaka</i> flour
3	<i>Papads</i> (9)	Cereal	Rice, ragi, rice flakes and <i>papadi</i>
		Pulse	Black gram /green gram dhal and moth bean
		Vegetable	Potato
		Fruit	Jackfruit
4	<i>Sandiges</i> (8)	Cereal	Rice, sago, jowar, wheat and ragi
		Pulse	Cowpea and green gram dhal <i>wadi</i>
		Vegetable	Pumpkin
5	Thickeners and taste enhancers (3)	Oilseed	Ground nut, niger and sesame powders individually or in combinations
6	Chips (2)	Vegetables	Potato and bitter gourd
7	Acidulants (3)	Fruits	<i>Kadle huli, vate huli</i> and <i>chapane mavu</i>
8	Dehydrated (9)	Vegetables	Chick pea /fenu greek /curry leaves; cluster beans and stuffed chillies
		Fish	Salted fish and fish powder
		Meat	Mutton chunks
		Poultry	Chicken chunks



Plate.4. Ready-to-use food accompaniments Sandiges and papads



Plate.5. Respondents from Binaga village of coastal zone with investigators

The different traditional ready-to-eat savory food accompaniments are indicated in Table 8. *Chutney* powders (9), *chutneys* (5), pickles and like products (23) and a dehydrated product were found to be prepared across the regions. The *chutney* powders were being prepared with puffed chickpea dhal, niger, groundnut, linseed, sesame, copra, fenugreek seeds and *karakina pudi*. *Chutneys* like garlic and red chillies were ground with spices, where as fish *chutney* was prepared by roasting the fish and pounding with spices. *Ranjaka* was prepared by grinding ripe chillies with spices. Mesta *chutney* was reported to be prepared by roasting mesta leaves grinding with spices.

About 20 different types of pickles were prepared in the study area, *karindi*, tamarind *tokku* and salted jackfruit were the unique region specific pickle like products. *Karindi* was documented in dry and transitional zones, where in cucumber and carrots were placed in a mud pot kept covered in sun and allowed to ferment. Tamarind *tokku* was prepared by grinding unripe tamarind with spices to a paste. Salted jackfruit was a unique traditional savory food of hilly zone, where the tender jackfruit was salted for later use in curry, *bhajis* and *papads* or as such as an accompaniment. Amla pieces were prepared as a dehydrated product.

It was reported that the *chutney* powders of prawn and *karkin pudi*, *chutneys* of fish and mesta and pickle like products like *karindi*, tamarind *tokku* and salted jackfruit were the unique region specific TCFs prepared by the respondents of different zones of Karnataka.

Ready-to-use TCFs are depicted in Table 9. Eight different types of ready-to-use TCFs such as farina including traditional pasta, flours, *papads*, *sandiges*, thickeners and taste enhancers, chips, acidulants and dehydrated products (totally 56) were documented across the zones selected for study.

There were 13 different types of farina products, included including nine traditional pasta products. The products such as *angikasi*, *gulagi*, *gauli*, *paradi*, *ugarattu*, *souti beeja* and vermicelli were prepared from domestically milled refined wheat flour. Dough was moulded into bits of tiny pasta either by hand or using indigenous tools or equipments. *Angikasi* was prepared by rolling the dough thinly and cutting into thin strips like ribbon pasta. *Anekallu* was prepared using special tools. Wheat was soaked for 24 hours, ground, starch separated and dropped in droplets, dried and stored. These pasta were stored for later use as in the dessert preparations. The flours included five types of cereal based (jowar, wheat, bajra, rice and foxtail millet flour) and three types of pulse based (bengal gram flour, *zunaka* flour and *hurali sangati*) foods.

A total of nine types of *papads* prepared with cereals (4), pulses (3), vegetable (1) and fruit (1) were documented. Another ready-to-use TCF *sandiges* were documented, which were of 8 types. Thickeners and taste enhancers were the other types of ready-to-use TCFs, which were oilseed based (3 types). Potato and bitter gourd were the two types of chips documented. Fruit based acidulants (3) were namely *kadle huli*, *vate huli* and *chapane mavu*. Five dehydrated products of vegetables and four meat and fish based ready-to-use TCFs were documented.

Thus it was observed from the table that maximum of the ready-to-eat TCFs (13) documented were farina including traditional pasta.

The TCFs documented and actually prepared in different zones of Karnataka is presented in table 10. A total of 131 and 134 TCFs in rural and urban communities was documented, respectively. However the number of TCFs actually prepared was observed to be lesser than the number documented. Only 81 and 64 TCFs were prepared in rural and urban areas, respectively. When different rural zones were compared, highest number of TCFs were documented in dry zone (92), followed by transitional zone (81), coastal zone (74) and hilly zone (73). However the number of TCFs actually prepared were less than the documented in all the zones. Among the rural communities highest number of TCFs were prepared by respondents in dry zone (52), followed by hilly zone (44), transitional zone (28) and least number were prepared (17) by the respondents of coastal zone. Among the different urban zones, highest number of TCFs were documented in hilly zones (113), followed by coastal (102), dry (94) and transitional zone (83). However the number of TCFs actually prepared were less than the documented in all the zones. Among the urbanites highest number of TCFs were prepared by respondents of hilly zone (42), followed by coastal (35), dry (33) and least (26) were prepared by respondents of transitional zone.

Table 10. Traditional convenience foods known v/s prepared in different zones of Karnataka

Group	Location	Transitional zone	Dry zone	Hilly zone	Coastal zone	Total #
Cereal	Rural	39 (11)	39 (24)	23 (17)	25(6)	50(37)
	Urban	33 (8)	40 (14)	44 (17)	39 (12)	48(25)
Pulse	Rural	14 (8)	14 (9)	14 (5)	11 (3)	25(9)
	Urban	11 (4)	14 (8)	15 (5)	15 (6)	24(9)
Oilseeds	Rural	14 (5)	15 (8)	9 (3)	9 (4)	15(13)
	Urban	17 (7)	13 (3)	15 (2)	15 (6)	17(13)
Vegetables	Rural	8 (2)	14 (6)	4 (4)	6 (-)	16(11)
	Urban	14 (5)	14 (5)	16 (5)	15 (3)	21(9)
Fruit	Rural	4 (2)	6 (4)	16 (13)	17 (1)	17(7)
	Urban	7 (2)	9 (3)	13 (12)	13 (8)	14(7)
Sugar/ Jaggery	Rural	-	1 (1)	-	-	1(1)
	Urban	-	-	-	-	-
Milk	Rural	2 (-)	3 (-)	3 (-)	3 (1)	3(1)
	Urban	2 (-)	3 (-)	3 (-)	3 (-)	3(-)
Fish/ Meat	Rural	-	-	4 (2)	3 (2)	4(2)
	Urban	-	1 (-)	7 (1)	2 (-)	7(1)
Combined Total	Rural	81 (28)	92 (52)	73 (44)	74 (17)	131(81)
	Urban	83 (26)	94 (33)	113 (42)	102 (35)	134(64)

Figures in parenthesis indicate the number of foods prepared at least by 50% of the families surveyed under each location.

Total known TCFs

A total of 50 and 48 of cereal group TCFs in rural and urban communities were documented, respectively. However, the number of TCFs prepared actually were observed to be less than the number of documented (37 and 25, respectively) in rural and urban areas. When different rural zones were compared, highest number of cereal based TCFs were documented in dry and transitional zones (39 each), followed by coastal (25) and hilly zones (23). Among the rural communities highest number of TCFs were prepared by respondents in dry zone (24), followed by hilly zone (17), transitional zone (11) and least were prepared (6) by the respondents of coastal zone. Among the different urban zone, highest number of cereal based TCFs were documented in hilly zone (44), followed in dry zone (40), coastal zone (39) and transitional zone (33). Among the urbanites, highest number of TCFs were prepared by respondents in hilly zone (17), followed by dry zone (14), coastal zone (12) and least (8) were prepared by respondents of transitional zone.

With respect to pulse based TCFs, a total of 25 and 24 in rural and urban communities were documented, respectively. However, the actual number of pulse based TCFs was observed to be less than the number of documented (9 each, respectively) in rural and urban areas. When different rural zones were compared, highest number of pulse based TCFs were documented in transitional, dry and hilly zones (14 each), and followed by coastal zone (11). However, the number of TCFs actually prepared were less than the documented in all the zones. Among the rural communities highest number of TCFs were prepared by respondents of dry zone (9), followed by transitional (8), hilly (5) and least were prepared (3) by the respondents of coastal zone. Among the different urban zones, highest number of TCFs were documented in hilly and coastal zone (15 each), followed by dry (14) and transitional zone (11). Pulse based TCFs, actually prepared were less than documented, which was on a similar trend with that of cereal based TCFs. Among the urbanites, highest number of pulse based TCFs was prepared by respondents of dry zone (8), followed by transitional (4), coastal (6) and least (5) were prepared by the respondents of hilly zone.

Oilseed based TCFs were documented of total 15 and 17, in a rural and urban communities, respectively. However the actual number of oilseed based TCFs were observed to be less than that of documented i.e., 13 each in rural and urban areas. When different rural zones were compared highest number of oilseed based TCFs were documented in dry zone (15), followed by transitional zone (14) and hilly and coastal zones (9 each, respectively). However the number of TCFs actually prepared was less than the documented in all the zones. Among the rural communities highest number of oilseed based TCFs were prepared by respondents of dry zone (8), followed by transitional zone (5), coastal zone (4) and least (3) were prepared by the respondents of hilly zone. Among the different urban zones, highest number of oilseed based TCFs were documented in transitional zone (17), followed by hilly and coastal zones (13 each, respectively). Among the urbanites highest number of TCFs were prepared by respondents of transitional zone (7), followed by coastal zone (6), dry zone (3) and least (2) were prepared by respondents of hilly zone.

A total of 16 and 21, vegetable based TCFs were documented in rural and urban communities, respectively. However the actual number of TCFs prepared were observed to be less than the number documented 11 and 9 in rural and urban areas, respectively. When different rural communities were compared highest number of vegetable based TCFs were documented in dry zone (14), followed by transitional (8), coastal (6) and hilly zones (4). Among the rural communities highest number of TCFs were prepared by respondents of dry zone (6), followed in hilly zone (4) and least were prepared by the respondents of transitional zone (2). Vegetable based TCFs were not prepared in the coastal zone. Among the urbanites, highest number of vegetable based TCFs were documented by respondents in hilly zone (16), followed by coastal (15) and transitional and dry zone (14 each). Among the urbanites, highest number of TCFs were prepared by respondents in transitional, dry and hilly zone (5 each), and least (3) were prepared by coastal zone respondents.

Documented fruit based TCFs were a total of 17 and 14 in rural and urban communities, respectively. However the number of TCFs actually prepared were seven each in rural and urban areas, respectively. When different rural zones were compared highest number of fruit based TCFs were documented in coastal zone (17) followed by hilly (16), dry (6) and transitional zones (4). Among the rural communities highest number of fruit based TCFs were prepared by respondents of hilly zone (13), followed by dry zone (4), transitional zone (2) and least were prepared by the respondents of coastal zone (1). Among the different

urban zones, highest number of fruit based TCFs were documented of hilly and coastal zones (13 each), followed by dry zone (9) and transitional zone (7). Among the urbanites highest number of TCFs was prepared by respondents in hilly zone (12), followed in coastal zone (8), dry zone (3) and least were prepared by the respondents of transitional zone (2).

Only one, sugar / jaggery based TCF was prepared and documented in rural community of dry zone.

Milk based TCFs were of total three each documented in rural and urban communities, respectively. However only one milk based TCF was prepared actually in rural and urban respondents. When different rural zones were compared highest number of milk based TCFs were documented in dry, hilly and coastal zones (3 each), followed by transitional zone (2), respectively. Among the rural communities only one milk based TCF were found to be prepared by the respondents in the coastal zone. Among the urbanites of different zones, highest number of milk based TCFs was documented in dry, hilly and coastal zones (3 each), followed by transitional zone (2). No milk based TCFs were prepared by the urban respondents of different zones.

A total of four and seven, fish or meat based TCFs were documented in rural and urban communities, respectively. However the number of TCFs prepared actually were observed to be less than the number documented i. e., two and one in rural and urban areas, respectively. When rural communities of different zones were compared highest number of fish or meat based TCFs was documented in hilly zone (7), followed in coastal zone (2), dry zone (1) and no fish or meat based TCFs were documented and prepared in transitional zone. Among the rural communities, number of TCFs prepared by respondents were two each in hilly and coastal zones, respectively. No TCFs were commonly prepared by the respondents in transitional and dry zones. Among the urbanities of different zones, highest number of fish or meat based TCFs were documented in hilly zone (7), followed by coastal zone (2) and dry zone (1). However, preparation of one the fish or meat based TCFs were found to be common only among the urban respondents of hilly zone.

Thus it was observed that maximum of the TCFs were documented by the urban populations (134), on contrary maximum TCFs prepared were by the rural respondents (81). And also it was observed that the number of actually prepared TCFs were less than the documented in all the zones surveyed.

The ready-to-eat TCFs in different zones of Karnataka are depicted in Table 11. *Laddus* (16), *holiges* (8) and other sweets (26) consisted the group, however there was a discrepancy in between the foods documented and prepared. Although 16 types of laddus were documented, only eight types were commonly prepared by at least 50 per cent of the samples selected across the zones. Similarly only four types of *holiges* were prepared against the eight documented across the regions. Similar trend was observed in preparation of other sweets also. Although 25 different types of sweets were documented there were only eight most commonly prepared across the zones.

The ready-to-eat savory TCFs documented and most commonly prepared by respondents of different zones of Karnataka is presented in Table 12. The ready-to-eat savory TCFs documented were main courses (2), savory snacks (13), *chutney* powders (10), pickles and like products (29) and side dishes (2). However there was a discrepancy between the number of foods documented and most commonly prepared. It was observed that the two types of main course foods i.e., *rotis* were most commonly prepared across the zones. Although 13 various different types of savory snacks were documented only five were most commonly prepared by about 50 per cent of the respondents across the zones. Similarly only four types of *chutney* powders were prepared against the 10 documented *chutney* powders across the regions. Similar trend was observed in preparation of pickles and like products. Although 29 different types of pickles and like products were documented there were only 17 were most commonly prepared. Two ready-to-eat animal based TCFs (chicken and fish fry) were documented among the respondents; which were prepared by more than 50 per cent of the sample surveyed.

The different types of ready-to-use TCFs documented and most commonly prepared among the respondents of different zones of Karnataka is depicted in Table 13. The ready-to-use TCFs consisted of farina including traditional pasta (13), flours and *papads* (9 each), *sandiges* and chips (10), thickeners and taste enhancers (3), acidulants (3), dehydrated foods

Table 11. Ready to eat sweet traditional convenience foods commonly prepared in different zones of Karnataka

Product	Documented/ Prepared	Transitional zone		Dry zone		Hilly zone		Coastal zone	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Laddus	Documented (16)	<i>Rava, godhi, maida, gulladki, rajgiri, tambittu, churmuri, boondi, ladagi, besan, sev, hesarunde, shenga, kobbari, yellu and antinunde</i>							
	Prepared (8)	<i>Rava, besan shenga and yellu</i>	<i>Rava and besan</i>	<i>Rava, godhi, tambittu, besan, shenga and kobbari</i>	-	<i>Rava, godhi and besan</i>	<i>Rava, godhi and besan</i>	<i>Godhi, besan and boondi</i>	<i>Rava, godhi besan and boondi</i>
Holiges	Documented (8)	<i>Surali, hurakki, bellad, rava, sakkari, shenga, yellu and kobbari</i>							
	Prepared (4)	<i>Yellu</i>	<i>Sheng a and yellu</i>	<i>Hurakki, shenga and yellu</i>	<i>Hurakki</i>	<i>Kobbari</i>	<i>Kobbari</i>	<i>Shenga and kobbari</i>	<i>Shenga and kobbari</i>
Other sweets	Documented (26)	<i>Jilebi, shankarpali, madli, balushahi, halpi, karachikai, atirasa, bola guli, mysorepak, panchakajjaya (3 types), akki kajjay, shenga/ yellu chikki, burfis of coconut, cashew, jackfruit, garden cress seeds; kumbal garagi, banana halwa, sata, kakavi, pedha, kunda and ginnada wadi</i>							
	Prepared (8)	<i>Shankarpali and halpi</i>	-	<i>Shankarpali karchikai, shenga chikki and kakavi</i>	<i>Shankarpali and karchikai</i>	<i>Karchikai, atirasa and akki kajjaya</i>	<i>Karchikai, atirasa and akki kajjaya</i>	<i>Shankarpali, karchikai, akki kajjaya, atirasa, kobbari wadi</i>	<i>Karchikai, kobbari wadi</i>

Commonly prepared foods include those that were prepared at least by 50% of the families surveyed under each location.

Table 12. Ready to eat savory traditional convenience foods commonly prepared in different zones of Karnataka

Product	Transitional zone		Dry zone		Hilly zone		Coastal zone	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Documented (2)	Main course: Crisp jowar and bajra <i>roti</i>							
Prepared (2)	-	-	Crisp jowar and bajra <i>roti</i>	-	-	-	-	-
Documented (13)	Snacks: Rice flakes /puffed rice/ sago / <i>menthe</i> /murmuri <i>chivdas</i> ; <i>kodbale</i> , <i>nippattu</i> , chickpea / rice <i>chakkali</i> ; jackfruit / banana chips; <i>akki wadi</i> and <i>sev</i>							
Prepared (7)	Rice flakes / puffed rice <i>chivda</i> , <i>kodbale</i> and <i>chakkali</i>	-	Rice flakes / puffed rice <i>chivda</i> and <i>chakkali</i>	Rice flakes <i>chivda</i> , <i>kodbale</i> and <i>chakkali</i>	Rice flakes/sago <i>chivda</i> , <i>chakkali</i> and jackfruit / banana chips	Rice flakes / puffed rice <i>chivda</i> , <i>chakkali</i> and jackfruit / banana chips	-	Rice flakes <i>chivda</i> , <i>kodbale</i> , <i>chakkali</i> and jackfruit chips
Savory accompaniments								
Documented(10)	<i>Chutney</i> powders: Puffed chick pea, <i>menthe</i> powder, ground nut, linseed, niger, sesame, copra, curry leaves , <i>karkin pudi</i> and fish							
Prepared (4)	Puffed chick pea, niger, ground nut and linseed	Puffed chickpea, ground nut, niger and linseed	Puffed chick pea, niger ground nut and linseed	Puffed chick pea, niger ground nut and linseed	Puffed chick pea and ground nut	-	-	Puffed chick pea and ground nut

Table 12. (Continued)

Product	Transitional zone		Dry zone		Hilly zone		Coastal zone	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Documented (29)	Pickles /alike: Garlic, ginger, <i>mangani беру</i> , chilly, bitter gourd, drumstick, tender mango, tender bamboo, <i>mekkikai</i> , tomato, brinjal, <i>karindi</i> , mixed vegetables, lemon, mango, <i>midigai</i> , <i>kanchikai</i> , <i>kavalikai</i> , <i>karl kai</i> , <i>amate kai</i> , amla and prawn pickle; tamarind <i>tokku</i> , dried amla, salted jackfruit ; garlic, red chilly, <i>ranjaka</i> , mesta and fish <i>chutney</i>							
Prepared (17)	Lemon, mango pickle; <i>ranjaka</i> and red chilly <i>chutney</i>	Mixed vegetables lemon, mango pickle; <i>ranjaka</i>	Garlic, <i>mangani беру</i> , bitter gourd, lemon, mango, <i>kanchikai</i> pickle; red chilly <i>chutney</i>	Bitter gourd, <i>karindi</i> , lemon, mango, <i>kanchikai</i> pickle; red chilly <i>chutney</i>	Chilly, lemon, mango, <i>kanchikai</i> , <i>karl kai</i> , <i>midigai</i> , <i>amate kai</i> , prawn pickle; salted jackfruit	Chilly, lemon, mango, <i>midigai</i> , <i>kanchikai</i> , <i>karl kai</i> , <i>amate kai</i> , prawn pickle; dried amla	-	Mixed vegetables, chilly, bitter gourd, lemon, mango, <i>midigai</i> and <i>amate kai</i> pickle
Documented (2):	Side dishes: Chicken and fish fry							
Prepared (nil)	-	-	-	-	-	-	-	-

Commonly prepared foods include those that were prepared at least by 50% of the families surveyed under each location.

Table 13. Ready to use traditional convenience foods commonly prepared in different zones of Karnataka

Product	Transitional zone		Dry zone		Hilly zone		Coastal zone	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Documented(13)	Farina including pasta: <i>Angikasi, anekallu, gulagi, gauli, parade, ugarattu, souti beeja</i> , wheat/rice vermicelli; wheat/ jowar/ maize/ coarse semolina							
Prepared (8)	<i>Souti beeja</i> , wheat vermicelli and semolina	<i>Souti beeja</i> , wheat vermicelli and semolina	<i>Gulagi, gauli, souti beeja</i> , wheat vermicelli and jowar/ wheat/ maize / coarse semolina	<i>Souti beeja</i> , wheat vermicelli and semolina	Wheat vermicelli and semolina	Wheat vermicelli and semolina	-	Wheat vermicelli and semolina
Documented(9)	Flours: Jowar, wheat, bajra, rice, foxtail millet flour, <i>pitti</i> flour, <i>hurali sangati</i> , chick pea dhal and green gram dhal							
Prepared (6)	Jowar, wheat and chick pea dhal	Jowar, wheat and chick pea dhal	Jowar, wheat, bajra, chick pea dhal and green gram dhal	Jowar, wheat, chick pea dhal and green gram dhal	Wheat, rice and chick pea dhal	Wheat, rice and green gram dhal	Wheat and rice	Wheat and rice
Documented(9)	<i>Papads</i> : Rice, ragi, rice flakes, <i>papadi</i> , black gram dhal, green gram dhal, moth bean, potato and jackfruit							
Prepared (3)	Black gram dhal	Black gram dhal	Black gram dhal	Ragi and black gram dhal	Rice and ragi	Rice, ragi and black gram dhal	-	Black gram dhal
Documented(10)	<i>Sandiges</i> and chips: Rice/ jowar/sago/ wheat/ ragi/ cowpea/green gram dhal <i>wadi</i> , pumpkin <i>sandiges</i> ; potato and bitter gourd chips							
Prepared (6)	Rice and cowpea <i>sandiges</i>	Rice/sago and pumpkin <i>sandiges</i>	Rice/jowar/sago and pumpkin <i>sandiges</i>	Rice/jowar/ sago/ cowpea and pumpkin <i>sandiges</i>	Rice/sago/ wheat and pumpkin <i>sandiges</i>	Rice/sago/ wheat and pumpkin <i>sandiges</i>	-	Rice and sago <i>sandiges</i>

Table 13. (Continued)

Product	Transitional zone		Dry zone		Hilly zone		Coastal zone	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Documented (3)	Thickeners and taste enhancers: Ground nut, niger and sesame							
Prepared (3)	Ground nut and niger	Ground nut and niger	Ground nut, niger and sesame	Ground nut, niger and sesame	-	Ground nut, niger and sesame	-	-
Documented(3)	Acidulants: <i>Kadle huli</i> , <i>vate huli</i> and <i>chapane mavu</i>							
Prepared (-)	-	-	-	-	-	-	-	-
Documented(5)	Dehydrated vegetables: Chickpea/ curry/ fenugreek leaves; cluster beans and stuffed chillies							
Prepared (5)	Curry leaves and stuffed chillies	Curry leaves and stuffed chillies	Chickpea, fenugreek, curry leaves; cluster beans and stuffed chillies	Chickpea leaves, curry leaves and stuffed chillies	Curry leaves and stuffed chillies	Curry leaves and stuffed chillies	-	-
Documented (4)	Others: Salted fish, fish powder, chicken chunks and mutton chunks							
Prepared (1)	-	-	-	-	-	-	Salted fish	-

Commonly prepared foods include those that were prepared at least by 50% of the families surveyed under each location.

(5) and animal based ready-to-use TCFs (4). However there was a discrepancy between the foods documented and most commonly prepared. Although 13 types of farina including traditional pasta were documented only eight types were commonly prepared by at least 50 per cent of the respondents across the zones. Similarly only six types of flours and three types of *papads* were prepared against the nine each documented flours and *papads* across the regions. Similar trend was observed in preparation of *sandiges* and chips, although 10 different types were documented; only six were most commonly prepared. Three types of thickeners and taste enhancers were documented and prepared across the zones. Three types of acidulants although documented across the regions, they were not prepared commonly, in contrast with the dehydrated products (5) which were also commonly prepared by at least 50 per cent of the population across the coastal zones.

Methods of cooking employed in preparation of different ready-to-eat TCFs are presented in Table 14. Various methods starting from minimal process of mixing to fermentation were employed in preparation of TCFs. One of the product *kakavi* a ready-to-eat sweet convenient food is usually processed from jaggery making units in dry zones of Karnataka. It was generally not prepared at household levels. Some products like *panchakajjaya* (3 types) were prepared by mere mixing of basic ingredients. Unique foods such as fish fry, *ginnadawadi* / *kobbari susla* were prepared by simple shallow frying and simmering methods, respectively. Dry heat application through conduction baking (7 foods), roasting and powdering (10 food accompaniments) were prepared traditionally as convenient foods. Roasting with (4) or without (6) ghee were the techniques used in traditional laddu preparation. *Rajgiri laddu* was prepared by popping grain amaranth and bound with sugar or jaggery syrup.

Simple frying technique was used in preparation of eight TCFs and frying followed by sweetening with sugar/ jaggery was employed in preparation of traditional *laddus* (15) cooking to concentrate in presence of sugar and fruits were followed in preparation of several desserts (8) such as *mysorepak*, *burfis*, *halwas*, *pedha* and *halpi*. Fermentation was the most common method of preparation of TCFs such as pickles, *karindi* and *tokku*.

Thus maximum of the ready-to-eat TCFs were prepared by fermentation and least was prepared by shallow frying, pan baking and simmering.

The method employed in preparation of ready-to-use TCFs is depicted in Table 15. A total of 56 different ready-to-use TCFs were documented across the zones. Milled products in the form of semolina or flour were maximum among the ready-to-use category. Different types (9) of traditional pasta products and *papads* (9) were the popular convenient foods which were prepared from different flours moulded into doughs of appropriate consistency to different shapes and sizes. Special indigenous equipments were employed as special tools for the process. *Sandiges* (8) were prepared by soaking and grinding the basic ingredients to a fine paste followed by gelatinization. The mass is dropped into small discs and dried in sun for later use. Chips and acidulants (3 in each) were processed by drying for later use as snack items and culinary adjuncts, respectively. Some green leaves, animal foods were dried as convenient foods in different location. Taste enhancers for *bhajis*, curries and food accompaniments were prepared for convenience across the rural and urban population.

Seasonality of preparation of ready-to-eat and ready-to-use TCFs are depicted in Table 16. In summer and winter season, a total of 23 ready-to-eat and 40 ready-to-use foods were reported to be prepared by the respondents. Pickles and pickle like products (23), pasta and *papads* (9 each), *sandiges* (11), dehydrated foods (11) and acidulants (3) were reported to be prepared during summer and winter across the regions.

Only one type of TCF namely jackfruit preserved in salt was prepared in rainy season. *Laddus* (16), *holiges* (8), sweet snacks (26), savory snacks (13), *rotis* (2), *chutney* powders (10) and *chutneys* (5) were the commonly prepared ready-to-eat TCFs throughout the year. Semolina (4), flours (5), thickeners and taste enhancers (3) were the ready-to-eat and 56 ready-to-use foods were prepared in different seasons.

Thus the number of ready-to-eat TCFs prepared throughout the year were maximum (82), where as among the ready-to-use TCFs maximum were prepared during summer and winter season (40).

Table 14. Method of cooking employed in preparation of ready to eat traditional convenience foods of Karnataka

No	Method of Preparation	Ready-to-eat traditional convenience foods	Number of products
1.	Boiling	<i>Kakavi</i>	1
2.	Mixed	Rice flakes/ green gram dhal/ chick pea dhal <i>panchakajjaya</i>	3
3.	Dried	<i>Sata, bola gulli</i> and amla	3
4.	Pan baked	Crisp jowar and bajra <i>rotis</i> and <i>surali/ shenga/ yellu / kobbari holige</i>	6
5.	Pan baked, pounded and sweetened	<i>Madli</i>	1
6.	Grinding	Garlic/ red chillies/ <i>ranjaka/ mesta / fish chutney</i>	5
7.	Simmered	<i>Ginnadawadi/ kobbari susla</i>	1
8.	Roasting and powdering	Puffed chick pea dhal/ niger/ groundnut/ linseed/ sesame/ copra/ curry leaves/ <i>karkin pudi, menthe</i> and prawn <i>chutney</i> powders	10
9.	Seasoned with oil and spices	Rice flakes/puffed rice/sago/ <i>menthe hittin avalakki/ murmuri chivda</i>	5
10.	Roasted, bound with sugar/ jaggery syrup	<i>Rava /maida / godhi / besan / tambittu/ hesarunde/ yellu/ shenga/ kobbari/ antinunde / churmuri laddus</i> and <i>yellu/ shenga chikki</i>	13
11.	Popped, bound with sugar/ jaggery syrup	<i>Rajgiri laddu</i>	1
12.	Shallow fried	Fish fry	1
13.	Fried	<i>Kodbale, nippattu</i> , chick pea / rice <i>chakkali</i> , chicken fry, <i>akki wadi</i> , sev and banana / jackfruit chips	9
14.	Fried and sweetened	<i>Boondi/ sev/ ladagi gulladaki laddus, hurakki/ rava/ sakkari /bellada holige, shankarpali, jilebi, atirasa, karchikai, balushahi, kumbal garagi</i> and <i>akki kajjaya</i> .	15
15.	Concentrated with sugar/fats	<i>Mysorepak, burfis</i> of jackfruit, coconut, garden cress seeds, cashewnut; banana <i>halwa, pedha, kunda</i> and <i>halpi/ putani karadantu</i>	9
16.	Fermented	Garlic/ ginger/ <i>mangniber/ chillies/ bitter gourd/ drumstick/ tender bamboo/ mekkikai/ tomato/ brinjal/ mixed vegetables/ lemon/ mango/ tender mango/ citron/ karonda/ karl kai/ amate kai / amla</i> and prawn pickles, <i>karindi</i> , tamarind <i>tokku</i> and brined jackfruit	23
Total			106

Table 15. Types of ready to use foods, method of preparation of ready to use traditional convenience foods of Karnataka

Types	Method of preparation	Products	Number
Flours	Milled	Jowar/ wheat/ bajra/ rice/ chick pea dhal / foxtail millet/ <i>hurali sangati/ pittu</i> flour/ <i>zunaka</i> flour	13
Semolina	Milled	Wheat fine and coarse/ jowar/ maize	
Traditional pasta	Dough molded with hand into different shapes and sizes. Special indigenous equipments are also employed in some pasta preparations	<i>Angikasi, anekallu, gulagi, gauli, paradi, ugarattu souti beeja</i> and wheat / rice vermicelli	9
<i>Papads</i>	Dough rolled to thin circles and dried	Rice, ragi, rice flakes, <i>papadi</i> , black gram dhal, green gram dhal, moth bean jackfruit and potato	9
<i>Sandiges</i>	Grains soaked overnight, ground, boiled to gelatinize and dried in small discs or dropped as small balls.	Jowar, rice, wheat, ragi, sago, cowpea, pumpkin and green gram dhal <i>wadi</i>	8
Chips and spicy accompaniments	Salting and drying	Potato/ bitter gourd chips and stuffed chillies	3
Acidulants	Salting and drying	<i>Kadle huli, vate huli</i> and <i>chapane mavu</i>	3
Dry vegetables	Drying	Chickpea/ fenugreek/ curry leaves and cluster beans	4
Dry animal foods		Fish and mutton/ chicken chunks	3
Powders	Drying and powdering	Fish powder	1
Thickeners and taste enhancers	Roasting and powdering	Ground nut, sesame and niger	3
Total			56

Table 16. Seasonality of preparation of traditional convenience foods

Ready-to-Eat		No.	Ready-to-use		No.
Summer and winter season					
Pickles (20)	Garlic, ginger, <i>mangani беру</i> , chilly, bitter gourd, drumstick, tender bamboo, <i>mekkikai</i> , tomato, brinjal, mixed vegetables, lemon, mango, <i>midigai</i> , <i>kanchikai</i> , <i>kavalikai</i> , <i>karl kai</i> , <i>amate kai</i> , amla and prawn pickle	23	Pasta (9)	<i>Angikasi</i> , <i>anekallu</i> , <i>gulagi</i> , <i>gauli</i> , <i>paradi</i> , <i>ugarattu</i> , <i>souti beeja</i> and wheat / rice vermicelli	40
			<i>Papads</i> (9)	Rice, ragi, rice flakes, <i>papadi</i> , black gram dhal, green gram dhal, moth bean, jackfruit and potato	
			<i>Sandiges</i> (8)	Jowar, rice, wheat, ragi, sago, cowpea, pumpkin and green gram dhal <i>wadi</i>	
Alike (3)	Tamarind <i>tokku</i> , <i>karindi</i> and dried amla		Dehydrated foods (14)	Chickpea/ fenugreek/ curry leaves; cluster beans, potato/ bitter gourd chips; stuffed chillies, mutton/ chicken chunks; fish powder, salted fish, <i>chapane mavu</i> , <i>kadle huli</i> and <i>vate huli</i>	
Rainy season	Jackfruit preserved in salt	1	-		-
Year round					
<i>Laddus</i> (16)	<i>Rava</i> , <i>godhi</i> , <i>maida</i> , <i>gulladki</i> , <i>rajgiri</i> , <i>tambittu</i> , <i>churmuri</i> , <i>boondi</i> , <i>ladagi</i> , <i>besan</i> , <i>sev</i> , <i>hesarunde</i> , <i>shenga</i> , <i>kobbari</i> , <i>yellu</i> and <i>antinunde</i>	82	Semolina (4)	Jowar, wheat fine and coarse and maize	16
<i>Holiges</i> (8)	<i>Surali</i> , <i>hurakki</i> , <i>bellad</i> , <i>rava</i> , <i>sakkari</i> , <i>shenga</i> , <i>yellu</i> and <i>kobbari</i>		Flours (9)	Jowar/ wheat/ bajra/ rice/ chick pea dhal/ <i>pitti</i> flour/ <i>hurali sangati</i> flour/ foxtail millet/and <i>zunaka</i> flour	
Sweet snacks (26)	<i>Jilebi</i> , <i>shankarpali</i> , <i>madli</i> , <i>balushahi</i> , <i>halpi</i> , <i>karachikai</i> , <i>atirasa</i> , <i>bola guli</i> , <i>mysorepak</i> , <i>panchakajjaya</i> (3 types), <i>akki kajjay</i> , <i>shenga/ yellu chikki</i> , <i>burfis</i> of coconut, cashew, jackfruit, garden cress seeds; <i>kumbal garagi</i> , banana <i>halwa</i> , <i>sata</i> , <i>kakavi</i> , <i>pedha</i> , <i>kunda</i> and <i>ginnada wadi</i>		Thickeners and taste enhancers (3)	Groundnut, niger and sesame powders	

Table 17. Traditional convenient health foods of Karnataka

Zone		Type	Ingredients	Form of consumption	Shelf life	Suitable	Percieved Reason
Transitional	Rural	Health foods	All jowar based foods	-	Depends on the type of food	All age groups	Cool, good for health
		Foods that keeps body warm (<i>hurali sangati</i>)	Horse gram	Porridge	Three months	All age groups	Keeps body warm
		Supplementary food	Foxtail millet flour	Porridge	Two to three months stored in aluminium box	Children aged more than one year	Provides more energy and prevents phlegm formation
		Diabetic (<i>jolada nuchhu</i>)	Jowar grits	Porridge	Four to five months stored in aluminium box	Adults	Bland and contains less sugar
	Urban	Galactogogues (<i>karakina pudi</i>)	Pepper and fenugreek	Porridge	One month	Lactating mothers	Aids milk secretion
		Post partum health foods (<i>aalvi burfi</i>)	Garden cress seed	<i>Burfi</i>	10 – 15 days		
Dry	Rural	Diabetic (<i>jolada nuchhu</i>)	Jowar grits	Porridge	Four to five months stored in aluminium box	Adults	Bland and contains less sugar
Coastal Rural		Supplementary food (<i>pitti</i>)	Flour mixture of rice, jowar, ragi, wheat and chick pea dhal	Porridge	45 days	Children aged more than 6 months	Promotes growth
Hilly Rural		Alleviates teething problem (<i>bola gulli</i>)	Ragi flour and jaggery	Small round <i>chapati</i> like, it is chewed	Nine months	Children aged more than 8 months	Helps to soothe gum and teeth eruption

Several foods with perceived health benefits were reported to be prepared in three zones is presented in Table 17. In the transitional zone, more foods were attributed to health benefits. It was opined by rural respondents that all foods based on jowar were health promoting. Some foods like *hurali sangati* were reported to keep the body warm and *jolada nuchhu* was indicated to be suitable for diabetics. Foxtail millet supplementary food for infants was indicated in the zone. Transitional urban zone respondents prepared a food perceived to be a galactogogues (*karakina pudu*) and a food suitable for women in post partum stages. In the dry rural zone *jolada nuchhu* was also indicated to be suitable for diabetics. In the coastal zone *pitti* and *bola guli* for children were prepared. These foods were reported to exhibit varied shelf life ranging from 15 days to nine months. Thus more number of health based TCFs were documented more in transitional zone.

TCF commonly purchased at least by 50 per cent of the families surveyed under each location is depicted in Table 18. The sweet snacks such as *jilebi*, *mysorepak*, were preferred by majority in transitional and coastal urban areas. Where as the later two were preferred in hilly zones and only *jilebi* was purchased in rural dry zones of Karnataka.

Besan, *boondi* and *sev laddus* were purchased by a majority of coastal urban respondents. The majority of respondents in dry zone purchased *pedha* and *kunda*, where as savory snacks like *khara* was purchased only by a majority in hilly zone. Potato chips were most favored in dry and rural coastal zones. However jackfruit chips were purchased wheat vermicelli in hilly zone, where as the farina and flours were found to be purchased among the majority of respondents across the zones.

Thus maximum of the ready-to-eat TCFs were purchased compared to ready-to-use TCFs.

TCFs modified in terms of ingredients and process is presented in Table 19. Modification in terms of ingredient variation was observed in preparation of some *laddus* such as *sev*, *shenga* and *kobbari*, where earlier they were prepared traditionally using jaggery but now prepared using sugar also, mainly for the purpose of sensory quality. Also the modification in preparation of *madli* was observed, where traditionally was prepared using wheat flour, a portion of semolina is mixed and prepared, and this modification was mainly for convenience. Crisp *rotis* are patted thinly for market mainly for the economy. Traditionally *chivda* was prepared by rice flakes, modification was observed in terms of main ingredients, where varieties of *chivdas* were prepared for sensory quality. Modification of ingredients was also observed in preparation of *chakkali* and *sev* for purpose of sensory quality. The same trend was observed in preparation of *chutneys* and pickles. Where as, *madli* was modified in terms of equipment also where, traditionally it was prepared by hand pounding with wooden pestle, but it is commercially milled mainly for convenience. Even the oilseed based *laddus*, *chutneys* and *chutney* powders were hand pounded / pasted with iron pestle, but now observed powdering / pasting in electrical grinders for convenience.

The modification in terms of ingredients and process was also observed among the ready-to-use TCFs. Vermicelli was modified both in terms of ingredients and process, where electrically operated machines were employed for preparation for variety and convenience. Other pasta products like *gauli*, *souti beeja*, *ugarattu* and *paradi* were traditionally prepared by domestically hand milling the raw ingredient in *chakki* but now milled in commercial mill for convenience. *Papads* are also modified in terms of ingredients, process and variation in size, mainly for convenience, sensory quality and variety. Also the value addition to *sandiges* was observed in terms of addition of colorants and size variation was also reported for convenience and variety. Traditionally the flours and semolina were milled in *chakki* but now observed milling in commercial mills for convenience.

Thus it was observed that the modification in terms of ingredients, process and the use of equipments for preparation was observed mainly for convenience, variety and value addition.

The type of storage employed for different TCFs of Karnataka is depicted in Table 20. It was reported that in steel / aluminium tins sweets like *laddus*, *holiges* and other desserts were stored. In the air tight tin lined with paper was used for storage of *hurakki holige*, where as *rava holige* was stored in bamboo baskets, covered with muslin cloth. In the steel or cardboard box other desserts like *jilebi*, *mysorepak*, *pedha* and main course like crisp jowar and bajra *rotis* were stored traditionally. Polythene pouches were used for sweets

Table 18. Major traditional convenience foods #purchased by respondents from the market

Food group	Foods	Transitional zone		Dry zone		Hilly zone		Coastal zone	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Ready to eat									
Sweet snacks	<i>Shankarpali</i>	-	15 (50.0)	-	-	-	-	-	29 (96.7)
	<i>Jilebi</i>	-	15 (50.0)	30 (100.0)	-	17 (56.7)	16 (53.3)	-	29 (96.7)
	<i>Mysorepak</i>	-	15 (50.0)	-	-	17 (56.7)	16 (53.3)	-	29 (96.7)
<i>Laddus</i>	<i>Besan</i>	-	-	-	-	-	-	-	29 (96.7)
	<i>Boondi</i>	-	-	-	-	-	-	-	29 (96.7)
	<i>Sev</i>	-	-	-	-	-	-	-	29 (96.7)
Sweets	<i>Pedha</i>	19 (63.3)	-	30 (100.0)	28 (93.3)	-	-	30 (100.0)	-
	<i>Kunda</i>	-	-	30 (100.0)	15 (50.0)	-	-	-	-
Savory snacks	<i>Khara</i>	-	-	-	-	17 (56.7)	16 (53.3)	-	-
	Potato chips	-	-	26 (86.7)	15 (50.0)	-	-	18 (60.0)	-
	Jackfruit chips	-	-	-	-	-	-	18 (60.0)	-
Ready to use									
Pasta	Wheat vermicelli	-	-	-	-	28 (93.3)	16 (53.3)	-	-
<i>Papad</i>	Black gram dhal	-	-	-	-	17 (56.7)	-	-	-
Farina	Wheat semolina	26 (86.7)	30 (100.0)	15 (50.0)	28 (93.3)	30 (100.0)	30 (100.0)	30 (100.0)	30 (100.0)
Flours	Wheat	-	19 (63.3)	-	15 (50.0)	-	16 (53.3)	-	25 (83.3)
	Refined	15 (50.0)	30 (100.0)	15 (50.0)	30 (100.0)	29 (96.7)	30 (100.0)	30 (100.0)	30 (100.0)
	Bengalgram dhal	-	-	-	19 (63.3)	25 (83.3)	30 (100.0)	25 (83.3)	28 (93.3)

#Commonly purchased foods include those that are purchased at least by 50% of the families surveyed under each location.

Table 19. Modifications in terms of ingredients/ equipments used in preparation of traditional convenience foods

Product	Traditionally used ingredients / equipments	Modified ingredients / process	Reason
Ready-to-eat			
Some <i>laddus</i>	Jaggery	Sugar	Sensory quality
<i>Madli</i>	Wheat flour	Semolina and flour	Convenience
Crisp <i>rotis</i>	Thinly patted	Very thinly patted for market	Economy
<i>Chivdas</i>	Rice flakes	Corn flakes, potato, nylon rice flakes and toasted rice flakes	Sensory quality
<i>Chakkali</i> and <i>sev</i>	Rice and chickpea flour	Ragi, spinach leaves, chilli, garlic and spice combinations	Sensory quality
<i>Chutneys</i>	Garlic, red chilli and mesta	Mango, amla, <i>kavalikai</i> , sweet <i>ranjaka</i> and lemon	Sensory quality
Pickles	Garlic, ginger, <i>mangani beru</i> , chilly, bitter gourd, drumstick, tender bamboo, <i>mekkikai</i> , tomato, brinjal, mixed vegetables, lemon, mango, <i>midigai</i> , <i>kanchikai</i> , <i>kavalikai</i> , <i>karl kai</i> , <i>amate kai</i> , amla and prawn pickle	Mesta, onion and sugar/ jaggery	Sensory quality
<i>Madli</i>	Hand pounded with wooden pestle	Commercially milled	Convenience
Oilseed based <i>laddus</i>	Hand pounded with iron pestle	Electrical grinders	Convenience
<i>Chutney</i> powders and <i>chutneys</i>	Hand pounded	Powdered in electrical grinders	Convenience
Ready-to-use			
Vermicelli	Wheat and rice flour	Ragi flour and electrically operated machines employed	Variety
<i>Gauli</i> , <i>souti beeja</i> , <i>ugarattu</i> and <i>paradi</i>	Domestically hand milled in a <i>chakki</i> (refined wheat flour)	Semolina or refined wheat flour milled in commercial mills	Convenience
<i>Papads</i>	Rice, wheat, ragi, rice flakes, black gram dhal, green gram dhal, moth bean, jackfruit and potato; hand rolled on rolling board and pin.	Spinach, garlic, onion and spices; and machine pressed, size variations.	Convenience, sensory quality and variety
Flours and semolina	Hand milled in <i>chakki</i>	Commercially milled	Convenience
<i>Sandiges</i>	Rice, sago, wheat, ragi, cowpea, pumpkin and onion	Size, colorants used (natural / artificial)	Variety, convenience and value addition



a



b



c



d

Plate.6.Indegenous equipments used in the preparation of traditional ready-to-use pasta products.

- a) Wooden plank with parallel grooves to roll dough into strands of vermicelli
- b) Perforated bamboo basket used for collecting vermicelli strands for drying
- c) Copper stick like tools used in preparation of Paradi traditional pasta
- d) Holes of the grater inserted with horns for preparation of traditional pasta Aanakallu

Table 20. Containers used in storage of traditional convenience foods.

Sl no	Foods	Container
I	Ready - to - eat	
1	<i>Laddus, surali/ bellad/ sakkari/ shenga/ yellu/ kobbari holiges; karachikai, madli, panchakajjayas, halpi, shenga/ yellu chikkis; burfis of coconut, cashew, jackfruit, garden cress seeds; banana halwa and ginnada wadi</i>	Steel / aluminium tin
2	<i>Hurakki holige</i>	Air tight tin lined with paper
3	<i>Rava holige</i>	Bamboo baskets, covered with muslin cloth.
4	<i>Jilebi, mysorepak, pedha, crisp jowar and bajra roti</i>	Steel / cardboard box
5	<i>Shankarpali, balushahi, atirasa, bola guli, akki kajjay, kumbal garagi, , sata, kunda, chivdas, savory snacks and dehydrated amla</i>	Polythene pouches and steel /aluminium containers/ cardboard box
6	Chicken and fish fry	Steel containers
7	<i>Chutney powders, chutneys and kakavi</i>	Plastic/ steel/ glass containers
8	<i>Fish chutney</i>	Steel/ glass containers
9	Pickles, tamarind <i>tokku</i> and salted jackfruit	Plastic / porcelain / glass containers
II	Ready - to - use	
1	Traditional pasta, <i>papads, sandiges</i> and dehydrated foods	Polythene pouches, in air tight tins.
2	Wheat/ jowar/ maize/ coarse semolina	Packed in steel/ aluminium box
3	Flours	Tins/ bamboo baskets
4	Ground nut, niger and sesame powders	Plastic /steel containers
5	<i>Kadle huli, vate huli, chapane mavu</i> and cluster beans.	Polythene sheets and stored in mud / porcelain/ glass containers.

Table 21. Effect of education and occupation of respondents' on number of traditional convenience foods prepared in different zones (rural and urban combined)

Variables	Ready- to- eat traditional convenience foods												
Education	Transitional zone			Dry zone				Hilly zone			Coastal zone		
	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
Illiterate	-	-	0.14 ^{NS}	-	5(8.3)	-	0.33 ^{NS}	9(15.0)	3(5.0)	0.57**	6(10.0)	-	0.60**
Primary	21(35.0)	-		2(3.3)	14(23.3)	2(3.3)		19(31.7)	11(18.3)		7(11.7)	8(13.3)	
High school	27(45.0)	1(1.7)		2(3.3)	16(26.7)	3(5.0)		1(1.7)	15(25.0)		4(6.7)	26(43.3)	
Degree	11(18.3)	-		4(6.7)	8(13.3)	4(6.7)		-	2(3.3)		1(1.7)	8(13.3)	
	Ready- to- use traditional convenience foods												
Education	Upto 10	11-20	r _c	Upto 10	11-20	r _c		Upto 10	11-20	r _c	Upto 10	11-20	r _c
Illiterate	-	-	0.22 ^{NS}	3(5.0)	-	0.27 ^{NS}		-	9(15.0)	0.18 ^{NS}	6(10.0)	-	0.58***
Primary	19(31.7)	2(3.3)		15(25.0)	5(8.3)			4(6.7)	26(43.3)		7(11.7)	7(11.7)	
High school	20(33.3)	8(13.3)		15(25.0)	6(10.0)			2(3.3)	15(25.0)		5(8.3)	26(43.3)	
Degree	9(15.0)	2(3.3)		8(13.3)	8(13.3)			-	4(6.7)		1(1.7)	8(13.3)	
Occupation	Ready- to- eat traditional convenience foods												
	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
Housewife	55(91.7)	1(1.7)	00.03 ^{NS}	4(6.7)	43(71.7)	9(15.0)	0.53 ^{NS}	4(6.7)	54(90.0)	0.28 ^{NS}	18(30.0)	39(65.0)	0.54***
Working	4(6.7)	-		3(5.0)	1(1.7)	-		1(1.7)	1(1.7)		-	3(5.0)	
Occupation	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c		Upto 10	11-20	r _c	Upto 10	11-20	r _c
Housewife	44(73.3)	-	0.13 ^{NS}	39(65.0)	17(28.3)	0.17 ^{NS}		4(6.7)	54(90.0)	0.28 ^{NS}	19(31.7)	38(63.3)	0.16 ^{NS}
Working	4(6.7)	12(20.0)		4(6.7)	-			1(1.7)	1(1.7)		-	3(5.0)	

Figures in parenthesis indicate per cent values

*- Significant at 5% level of significance

***- Significant at 0.5% level of significance

r_c - Contingency coefficient

** - Significant at 1% level of significance

^{NS} - Non significant

Table 22. Effect of education and occupation on number of traditional convenience foods prepared by rural and urban respondents' irrespective of zones

Variables	Ready to eat							Ready to use					
Education	Rural		r _c	Urban			r _c	Rural		r _c	Urban		r _c
	Upto 20	21-40		Upto 20	21-40	41-60		Upto 10	11-20		Upto 10	11-20	
Illiterate	12(10.0)	2 (1.7)	0.49*	3 (2.5)	6 (5.0)	-	0.23 ^{NS}	8 (6.7)	6 (5.0)	0.07 ^{NS}	3 (2.5)	3 (2.5)	0.09 ^{NS}
Primary	38(31.7)	9 (7.5)		11(9.2)	24(20.2)	2 (1.7)		30(25.0)	17(14.2)		15(12.5)	22(18.3)	
High school	15(12.5)	31(25.8)		19(15.8)	27(22.5)	3(2.5)		28(23.0)	18 (15.0)		13(10.8)	37(30.8)	
Degree	5 (4.2)	8 (6.7)		11(9.2)	12(10.0)	4 (3.3)		7 (5.8)	6 (5.0)		11 (9.2)	16(13.3)	
Occupation													
Housewife	48(40.0)	72(60.0)	-	33(27.5)	65(54.2)	9(7.5)	0.21 ^{NS}	73(60.8)	47 (39.2)	-	33(27.5)	74(61.7)	0.25*
Working	-	-		8 (6.7)	5 (4.2)	-		-	-		9 (7.5)	4 (3.3)	

Figures in parenthesis indicate per cent values

r_c - Contingency coefficient

*- Significant at 5% level of significance

^{NS} - Non significant

Table 23. Effect of education and occupation of respondents' on number of traditional convenience foods prepared in Transitional and Dry zones of Karnataka

Variables	Ready- to- eat traditional convenience foods												
Education	Transitional zone						Dry zone						
	Rural			Urban			Rural			Urban			
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c
Illiterate	-	-	0.24 ^{NS}	-	-	-	-	2(6.7)	0.29 ^{NS}	-	3(10.0)	-	0.50 ^{NS}
Primary	14(46.7)	2(6.7)		6(20.0)	-		1(3.3)	8(26.7)		2(6.7)	6(20.0)	2(6.7)	
High school	10(33.3)	-		17(56.7)	-		-	14(46.7)		1(3.3)	2(6.7)	3(10.0)	
Degree	4(13.3)	-		7(23.3)	-		-	5(16.7)		4(13.3)	3(10.0)	4(13.3)	
Education	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
Illiterate	-	-	-	-	-	0.17 ^{NS}	-	-	0.39 ^{NS}	3(10.0)	-	0.33 ^{NS}	
Primary	15(50.0)	-		4(13.3)	2(6.7)		9(30.0)	2(6.7)		6(20.0)	3(10.0)		
High school	11(36.7)	-		7(23.3)	8(26.7)		12(40.0)	2(6.7)		3(10.0)	4(13.3)		
Degree	4(13.3)	-		5(16.7)	2(6.7)		2(6.7)	3(10.0)		6(20.0)	5(16.7)		
Occupation	Ready- to- eat traditional convenience foods												
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c
Housewife	29(96.7)	1(3.3)	-	26(86.7)	-	-	1(3.3)	29(96.7)	-	3(10.0)	14(46.7)	9(30.0)	0.90***
Working	-	-		4(13.3)	-		-	-		3(10.0)	1(3.3)	-	
Occupation	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
Housewife	30(100.0)	-	-	14(46.7)	12(40.0)	0.32 ^{NS}	25(83.3)	5(16.7)	-	14(46.7)	12(40.0)	0.10 ^{NS}	
Working	-	-		4(13.3)	-		-	-		4(13.3)	-		

r_c - Contingency coefficient, ^{NS} - Non significant, * - Significant at 5% level of significance, ** - Significant at 1% level of significance, *** - Significant at 0.5%

Table 24. Effect of education and occupation of respondents' on number of traditional convenience foods prepared in Hilly and Coastal zones of Karnataka

Variables	Ready- to- eat traditional convenience foods											
	Hilly zone						Coastal zone					
Education	Rural			Urban			Rural			Urban		
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
Illiterate	6(20.0)	-	0.91 ^{NS}	3(10.0)	3(10.0)	0.31 ^{NS}	6(20.0)	-	0.59***	-	-	-
Primary	16(53.3)	-		4(13.3)	11(36.7)		7(23.3)	1(3.3)		-	7(23.3)	
High school	-	6(20.0)		1(3.3)	6(20.0)		5(16.7)	9(30.0)		-	16(53.3)	
Degree	-	2(6.7)		-	2(6.7)		1(3.3)	1(3.3)		-	7(23.3)	
Education	Ready- to- use traditional convenience foods											
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c
Illiterate	-	6(20.0)	-	-	3(10.0)	0.28 ^{NS}	6(20.0)	-	0.59***	-	-	0.34 ^{NS}
Primary	-	15(50.0)		4(13.3)	11(36.7)		6(20.0)	1(3.3)		1(3.3)	6(20.0)	
High school	-	6(20.0)		1(3.3)	9(30.0)		5(16.7)	10(33.3)		-	16(53.3)	
Degree	-	2(6.7)		-	2(6.7)		1(3.3)	1(3.3)		-	7(23.3)	
Occupation	Ready- to- eat traditional convenience foods											
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
Housewife	-	30(100.0)	-	4(13.3)	24(80.0)	0.51***	18(60.0)	12(40.0)	-	-	27(90.0)	-
Working	-	-		1(3.3)	1(3.3)		-	-		-	3(10.0)	
Occupation	Ready- to- use traditional convenience foods											
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c
Housewife	-	30(100.0)	-	4(13.3)	24(80.0)	0.51***	18(60.0)	12(40.0)	-	1(3.3)	26(86.7)	0.06 ^{NS}
Working	-	-		1(3.3)	1(3.3)		-	-		-	3(10.0)	

r_c - Contingency coefficient, ^{NS}- Non significant, *- Significant at 5% level of significance, **- Significant at 1% level of significance, ***- Significant at 0.5%

(*shankarpali, balushahi, atirasa, bola gulli, akki kajjaya, kumbal garagi, sata and kunda*), savory snacks and dehydrated amla. Traditionally only steel containers were used for storing chicken and fish fry. *Chutney* powders, *chutneys* and *kakavi* were stored in plastic / steel / glass containers. The plastic / porcelain / glass containers were used traditionally for the storage of pickles and pickle like products and steel glass containers for fish *chutney*.

The air tight tins lined with polythene pouches were traditionally used for storing the ready-to-use TCFs (pasta, *papads, sandiges* and dehydrated foods); where as steel / aluminium box was used for semolina and flours in tin or bamboo baskets. Plastic / steel containers were used for thickeners and taste enhancers, where as acidulants and dehydrated cluster beans were stored in polythene sheets / mud pots / glass containers.

Thus the ready-to-eat and use TCFs were stored in different forms mainly maintaining its quality and improve shelf life.

4.3. Influence of different factors on preparation of TCFs

Influence of education level and occupation on preparation of TCFs in different zones of Karnataka is depicted in Table 21, 23 and 24. It was observed that in the hilly and coastal zone education exhibited a significant association with the number of ready-to-eat foods prepared. Educational empowerment from illiteracy to high school educated significantly increased the number of preparations; however the number of foods prepared by graduate respondents was less compared to others.

When impact of education between the rural and urban respondents were compared (Table 23 and 24), highly significant association was observed among rural respondents of coastal zone. Thus educational empowerment from illiteracy to high school educated significantly increased the number of preparations, with a decrease among graduates.

With respect to ready-to-use TCFs prepared (Table 21), education exhibited highly significant association among rural coastal respondents.

With respect to occupation and preparation of ready-to-eat TCFs (21) it was observed that occupation exhibited highly significant association with preparation of ready-to-eat TCFs in the coastal zone, who were not gainfully employed were preparing more number of ready-to-eat TCFs then respondents who were employed. With regard to location (Table 23 and 24), a significant association was indicated among urbanites of dry and hilly zones. The respondents who were not gainfully employed in urban areas prepared more TCFs compared to rural counter parts.

Within the zones the preparation of ready-to-use TCFs (Table 24), was highly significantly associated among urban hilly zones, where in urban respondents who were not gainfully employed prepared more number of ready-to-use TCFs.

Influence of education level and occupation on preparation of TCFs is depicted in Table 22. It was observed that only in the rural community, education exhibited a significant association with the number of ready-to-eat foods prepared. Educational empowerment from illiteracy to high school educated significantly increased the number of preparations; however there was a decrease among graduates.

With respect to occupation and preparation of ready-to-use TCFs, it was observed that occupation exhibited significant association with preparation of ready-to-use TCFs in the urban community, who were not gainfully employed were preparing more number of ready-to-use TCFs then respondents who were employed.

Family type and total family members less than 18 years influencing number of TCFs preparation by different zones of Karnataka is depicted in Table 25, 27 and 28. It was observed that in the coastal zone (Table 25) family type exhibited a highly significant association with the number of ready-to-eat foods prepared. It was reported that more ready-to-eat TCFs were prepared by nuclear type followed by extended and joint families. When the impact of family type between the rural and urban respondents was compared (Table 27 and 28), highly significant association was observed among urban respondents of coastal zone. Thus more number of ready-to-eat TCFs were prepared by nuclear type followed by extended and joint families.

Table 25. Effect of family type and total children on number of traditional convenience foods prepared in different zones of Karnataka

Variables	Ready- to- eat traditional convenience foods													
Family type	Transitional zone			Dry zone				Hilly zone			Coastal zone			
	Upto 20	21-40	r_c	Upto20	21-40	41-60	r_c	Upto 20	21-40	r_c	Upto20	21-40	41-60	r_c
Nuclear	33(55.0)	1(1.7)	0.11 ^{NS}	6(10.0)	31(51.7)	4(6.7)	0.31 ^{NS}	4(6.7)	35(58.3)	0.10 ^{NS}	9(15.0)	29(48.3)	-	0.70***
Joint	18(30.0)	-		-	3(5.0)	-		-	2(3.3)		3(5.0)	2(3.3)	-	
Extended	8(13.3)	-		1(1.7)	10(16.7)	5(8.3)		1(1.7)	18(30.0)		6(10.0)	3(5.0)	8(13.3)	
Family type	Ready- to- use traditional convenience foods													
	Upto 10	11-20	r_c	Upto 10	11-20	r_c		Upto 10	11-20	r_c	Upto 10	11-20	r_c	
Nuclear	28(46.7)	6(10.0)	0.26 ^{NS}	32(53.3)	9(15.0)	0.22 ^{NS}		4(6.7)	35(58.3)	0.10 ^{NS}	10(16.7)	28(46.7)	0.20 ^{NS}	
Joint	12(20.0)	6(10.0)		2(3.3)	1(1.7)		-	2(3.3)	3(5.0)		2(3.3)			
Extended	8(13.3)	-		9(15.0)	7(11.7)		1(1.7)	18(30.0)	6(10.0)		11(18.3)			
Total children	Ready- to- eat traditional convenience foods													
	Upto 20	21-40	r_c	Upto 20	21-40	41-60	r_c	Upto 20	21-40	r_c	Upto 20	21-40	r_c	
NIL	20(33.3)	-	0.13 ^{NS}	15(25.0)	6(10.0)	3(5.0)	0.31 ^{NS}	3(5.0)	14(23.3)	0.22 ^{NS}	9(15.0)	28(46.7)	0.24 ^{NS}	
Upto 2	29(48.3)	1(1.7)		17(28.3)	8(13.3)	5(8.3)		2(3.3)	32(53.3)		8(13.3)	14(23.3)		
2-4	8(13.3)	-		1(1.7)	3(5.0)	1(1.7)		-	7(11.7)		1(1.7)	-		
Above 4	2(3.3)	-		-	1(1.7)	-		-	2(3.3)		-	-		
Total children	Ready- to- use traditional convenience foods													
	Upto 10	11-20	r_c	Upto 10	11-20	r_c		Upto 10	11-20	r_c	Upto 10	11-20	r_c	
NIL	17(28.3)	3(5.0)	0.14 ^{NS}	9(15.0)	15(25.0)	0.31 ^{NS}		3(5.0)	14(23.3)	0.22 ^{NS}	10(16.7)	27(45.0)	0.21 ^{NS}	
Upto 2	23(38.3)	7(11.7)		19(31.7)	11(18.3)		2(3.3)	32(53.3)	8(13.3)		14(23.3)			
2-4	6(10.0)	2(3.3)		4(6.7)	1(1.7)		-	7(11.7)	1(1.7)		-			
Above 4	2(3.3)	-		1(1.7)	-		-	2(3.3)	-		-			

r_c - Contingency coefficient, ^{NS} - Non significant, * - Significant at 5% level of significance, ** - Significant at 1% level of significance, *** - Significant at 0.5%

Table 26. Effect of family type and total children on number of traditional convenience foods prepared in rural and urban locations irrespective of zones.

Variables	Ready to eat						Ready to use						
Family type	Rural		r _c	Urban			r _c	Rural		r _c	Urban		r _c
	Upto 20	21-40		Upto20	21-40	41-60		Upto 10	11-20		Upto10	11-20	
Nuclear	25(20.8)	47(39.2)	0.22*	27(22.5)	49(40.8)	4 (0.3)	0.68*	43(35.8)	29(24.2)	0.20 _{NS}	31(25.8)	49(40.8)	0.18 ^{NS}
Joint	8 (6.7)	3 (2.5)		13(10.8)	4 (3.3)	-		10 (8.3)	1 (0.8)		7 (5.8)	10 (8.3)	
Extended	15(12.5)	22(18.3)		1 (0.8)	9 (7.5)	13(10.8)		20(16.7)	17(14.2)		4 (3.3)	19(15.8)	
Total children													
NIL	32(26.7)	21(17.5)	0.05 _{NS}	15(12.5)	27(22.5)	3 (2.5)	0.09 _{NS}	20(16.7)	33(27.5)	0.29*	19(15.8)	26(21.7)	0.15 ^{NS}
Upto 2	33(27.5)	19(15.8)		23(19.2)	36(30.0)	5 (4.2)		31(25.8)	21(17.5)		21(17.5)	43(35.8)	
2-4	7 (5.8)	4 (3.3)		3 (2.5)	6 (5.0)	1 (0.8)		9 (7.5)	2 (1.7)		2 (1.7)	8 (6.7)	
Above 4	2 (1.7)	2 (1.7)		-	1 (0.8)	-		3 (2.5)	1 (0.8)		-	1 (0.8)	

Figures in parenthesis indicate per cent values

r_c - Contingency coefficient

*- Significant at 5% level of significance

_{NS} - Non significant

Table 27. Effect of family type and total children on number of traditional convenience foods prepared in Transitional and Dry zones of Karnataka

Variables	Ready- to- eat traditional convenience foods												
Family type	Transitional zone						Dry zone						
	Rural			Urban			Rural			Urban			
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c
Nuclear	16(53.3)	1(3.3)	0.16 ^{NS}	17(56.7)	-	-	-	21(70.0)	0.34 ^{NS}	6(20.0)	10(33.3)	4(13.3)	0.47 ^{NS}
Joint	5(16.7)	-		13(43.3)	-		-	2(6.7)		-	1(3.3)	-	
Extended	8(26.7)	-		-	-		1(3.3)	6(20.0)		-	4(13.3)	5(16.7)	
Family type	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
Nuclear	17(56.7)	-	-	11(36.7)	6(20.0)	0.11 ^{NS}	17(56.7)	4(13.3)	0.13 ^{NS}	15(50.0)	5(16.7)	0.45*	
Joint	5(16.7)	-		7(23.3)	6(20.0)		2(6.7)	-		-	1(3.3)		
Extended	8(26.7)	-		-	-		6(20.0)	1(3.3)		3(10.0)	6(20.0)		
Total children	Ready- to- eat traditional convenience foods												
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c
NIL	10(33.3)	-	0.21 ^{NS}	10(33.3)	-	-	13(43.3)	-	0.87***	2(6.7)	6(20.0)	3(10.0)	0.17 ^{NS}
Upto 2	12(40.0)	1(3.3)		17(56.7)	-		13(43.3)	-		4(13.3)	8(26.7)	5(16.7)	
2-4	5(16.7)	-		3(10.0)	-		1(3.3)	2(6.7)		-	1(3.3)	1(3.3)	
Above 4	2(6.7)	-		-	-		-	1(3.3)		-	-	-	
Total children	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
NIL	10(33.3)	-	-	7(23.3)	3(10.0)	0.21 ^{NS}	1(3.3)	1(3.3)	0.76**	8(26.7)	3(10.0)	0.20 ^{NS}	
Upto 2	3(10.0)	-		10(33.3)	7(23.3)		10(33.3)	3(10.0)		9(30.0)	8(26.7)		
2-4	5(16.7)	-		1(3.3)	2(6.7)		3(10.0)	-		1(3.3)	1(3.3)		
Above 4	2(6.7)	-		-	-		1(3.3)	-		-	-		

r_c - Contingency coefficient, ^{NS} - Non significant, * - Significant at 5% level of significance, ** - Significant at 1% level of significance, *** - Significant at 0.5%

Table 28. Effect of family type and total children on number of traditional convenience foods prepared in Hilly and Coastal zones of Karnataka

Variables	Ready- to- eat traditional convenience foods												
Family type	Hilly zone						Coastal zone						
	Rural			Urban			Rural			Urban			
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c
Nuclear	-	16(53.3)	-	4(13.3)	19(63.3)	0.09 ^{NS}	9(30.0)	9(30.0)	0.31 ^{NS}	-	20(66.7)	-	0.70***
Joint	-	1(3.3)		-	1(3.3)		3(10.0)	-		-	2(6.7)	-	
Extended	-	13(43.3)		1(3.3)	5(16.7)		6(20.0)	3(10.0)		-	8(26.7)		
Family type	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
Nuclear	-	16(53.3)	-	4(13.3)	19(63.3)	0.09 ^{NS}	9(30.0)	9(30.0)	0.31 ^{NS}	1(3.3)	19(63.3)	0.13 ^{NS}	
Joint	-	1(3.3)		-	1(3.3)		3(10.0)	-		-	2(6.7)		
Extended	-	13(43.3)		1(3.3)	5(16.7)		6(20.0)	3(10.0)		-	8(26.7)		
Total children	Ready- to- eat traditional convenience foods												
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	
NIL	-	12(40.0)	-	3(10.0)	2(6.7)	0.53**	9(30.0)	9(30.0)	0.27 ^{NS}	-	19(63.3)	-	
Upto 2	-	15(50.0)		2(6.7)	17(56.7)		8(26.7)	3(10.0)		-	11(36.7)		
2-4	-	2(6.7)		-	5(16.7)		1(3.3)	-		-	-		
Above 4	-	1(3.3)		-	1(3.3)		-	-		-	-		
Total children	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
NIL	-	12(40.0)	-	3(10.0)	2(6.7)	0.53**	9(30.0)	9(30.0)	0.27 ^{NS}	1(3.3)	18(60.0)	0.14 ^{NS}	
Upto 2	-	15(50.0)		2(6.7)	17(56.7)		8(26.7)	3(10.0)		-	11(36.7)		
2-4	-	2(6.7)		-	5(16.7)		1(3.3)	-		-	-		
Above 4	-	1(3.3)		-	1(3.3)		-	-		-	-		

r_c - Contingency coefficient, ^{NS} - Non significant, * - Significant at 5% level of significance, ** - Significant at 1% level of significance, *** - Significant at 0.5%

With regard to ready-to-use TCFs prepared (Table 27 and 28), family type exhibited significant relation among urban dry zone respondents.

With respect to family members less than 18 years and preparation of ready-to-eat and ready-to-use TCFs among the location (Table 27 and 28) it was observed that, highly significant association was indicated among rural of dry zone and urbanites of hilly zone. Thus as the number of members in the family less than 18 years decreased the number of TCFs prepared increased.

Family type and total family members less than 18 years influencing number of TCFs preparation by rural and urban community across the zones of Karnataka is shown in Table 26. It was observed that in both rural and urban community, type of family exhibited a significant association with the number of ready-to-eat foods prepared. Thus, it was observed that as the number of members in the family increased, number of ready-to-eat TCFs prepared decreased, that is more number by nuclear family followed by extended and joint family.

With respect to family members less than 18 years in the family and number of ready-to-use TCFs prepared by the rural community exhibited a significant relation, where number of ready-to-use TCFs prepared increased as the number of members decreased. That is more number were prepared by the families having no members less than 18 years, followed by families having two members of less than 18 years, 2-4 members and above four.

Influence of family size and number of generations living together with respect to total number of TCFs prepared by different zones of Karnataka is depicted in Table 29, 31 and 32. With respect to location (Table 31 and 32), significant association was indicated among rural population of dry and coastal zone with number of ready-to-eat TCFs and family size, where it was observed that as the number of members in the family decreased the number of ready-to-eat TCFs preparation increased. With regard to ready-to-use TCFs preparation family size exhibited a significant relation among urbanites of dry zone and rural population of coastal zone. Similar trend of preparation was observed.

With respect to number of generations living together and number of ready-to-eat and use TCFs prepared (Table 29), a significant association was observed among the dry zone and a very highly significant association among the coastal zone. It was exhibited that as the number of generations living together in the family increased, the number of ready-to-eat and use TCFs prepared decreased. With regard to location (Table 31 and 32), a highly significant association was indicated among urbanites of dry zone, with preparation of ready-to-use and ready-to-use TCFs. It was observed that as the number of generations living together increased the number of TCFs prepared decreased.

Family size and number of generations living together influencing the number of TCFs prepared by rural and urban communities is depicted in Table 30. It was observed that only number of generations living together influenced the preparation of ready-to-use TCFs of urban community. Thus, it was observed that as the number of generations living together increased, the ready-to-eat and ready-to-use TCFs preparation decreased.

4.4. Documentation of TCFs of Dharwad market

Traditional convenience foods available in Dharwad market are depicted in Table 33. A total of 70 TCFs which could be categorized as ready-to-eat (53) and ready-to-use (17) were the foods documented from Dharwad market. Among the ready-to-eat TCFs, main course were of two types (crisp jowar and bajra *roti*), sweets (18) which consisted of *laddus* (9), *holiges* (3) and other desserts (6). Savory foods (33) consisted of snacks (13), *chutney* powders (6), *chutneys* (4) and pickles (10).

Out of 17 ready-to-use TCFs documented pasta were of three types, *papads* were six types and *sandiges* and *sandige* like products were of eight types.

Thus ready-to-eat TCFs (53) were more documented from the Dharwad market when compared to ready-to-use TCFs (17).

Sale of TCFs in Dharwad food shops is shown in Table 34. It was observed that *rotis*, *papads* and pickles were found to be sold throughout the year. Pasta products such as vermicelli and *souti beeja* were sold in all the all season, only *ugarattu* was more sold during

Table 29. Effect of family size and number of generations living together on number of traditional convenience foods prepared in different zones of Karnataka

Variables	Ready- to- eat traditional convenience foods												
Family size	Transitional zone			Dry zone				Hilly zone			Coastal zone		
	Upto 20	21-40	r _c	Upto20	21-40	41-60	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
Small (Upto 4)	30(50.0)	1(1.7)	0.13 ^{NS}	5(8.3)	24(40.0)	3(5.0)	0.24 ^{NS}	3(5.0)	27(45.0)	0.08 ^{NS}	6(10.0)	34(56.7)	0.16 ^{NS}
Medium(5 to7)	25(41.7)	-		1(1.7)	17(28.3)	5(8.3)		2(3.3)	26(43.3)		8(13.3)	8(13.3)	
Large(8andabove)	4(6.7)	-		1(1.7)	3(5.0)	1(1.7)		-	2(3.3)		4(6.7)	-	
Family size	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c		Upto 10	11-20	r _c	Upto 10	11-20	r _c
Small (Upto 4)	25(41.7)	6(10.0)	0.15 ^{NS}	25(41.7)	7(11.7)	0.16 ^{NS}		3(5.0)	27(45.0)	0.08 ^{NS}	7(11.7)	3(5.0)	0.50 ^{NS}
Medium(5 to7)	19(31.7)	6(10.0)		5(8.3)	8(13.3)			2(3.3)	26(43.3)		8(13.3)	8(13.3)	
Large(8andabove)	4(6.7)	-		3(5.0)	2(3.3)			-	2(3.3)		4(6.7)	-	
Generations	Ready- to- eat traditional convenience foods												
	Upto 20	21-40	r _c	Upto20	21-40	41-60	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
One	38(63.3)	1(1.7)	0.10 ^{NS}	6(10.0)	33(55.0)	4(6.7)	0.27*	4(6.7)	37(61.7)	0.08 ^{NS}	12(20.0)	39(65.0)	0.34***
Two	21(35.0)	-		1(1.7)	11(18.3)	5(8.3)		1(1.7)	18(30.0)		6(10.0)	3(5.0)	
Generations	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c		Upto 10	11-20	r _c	Upto 10	11-20	r _c
One	30(50.0)	9(15.0)	0.11 ^{NS}	34(56.7)	9(15.0)	0.26*		4(6.7)	37(61.6)	0.08 ^{NS}	13(21.7)	38(63.3)	0.32**
Two	18(30.0)	3(5.0)		9(15.0)	8(13.3)			1(1.7)	18(30.0)		6(10.0)	3(5.0)	

Figures in parenthesis indicate per cent values

*- Significant at 5% level of significance

***- Significant at 0.5% level of significance

r_c - Contingency coefficient

** - Significant at 1% level of significance

^{NS} - Non significant

Table 30. Effect of family size and number of generations living together on number of traditional convenience foods prepared in rural and urban locations irrespective of zones.

Variables	Rural			Urban				Rural			Urban		
Range of family size	Ready to eat		r _c	Ready to eat			r _c	Ready to use		r _c	Ready to use		r _c
	Upto20	21-40		Upto20	21-40	41-60		Upto10	11-20		Upto10	11-20	
Small (Upto 4)	19(15.8)	39(32.5)	0.17 ^{NS}	25(20.8)	47(39.2)	3 (2.5)	0.24 ^{NS}	32(26.7)	26(21.7)	0.2 ^{NS}	28(23.3)	47(39.2)	0.12 ^{NS}
Medium(5 to7)	20(16.7)	30(25.0)		16(13.3)	21(17.5)	5(4.2)		30(25.0)	20(16.7)		14(11.7)	28(23.3)	
Large(8andabove)	9 (7.5)	3 (2.5)		-	2 (1.7)	1(0.8)		11 (9.2)	1 (0.8)		-	3 (2.5)	
Generations													
One	28(23.3)	51(42.5)	0.13 ^{NS}	32(26.7)	59(49.2)	4(3.3)	0.25*	48(40.0)	31(25.8)	0.05 ^{NS}	33(27.50)	62(51.7)	0.23*
> Two	20(16.7)	21(17.5)		9 (7.5)	11(9.2)	5 (4.2)		23(19.2)	18(15.0)		9 (7.5)	16(13.3)	

Figures in parenthesis indicate per cent values

r_c - Contingency coefficient

*- Significant at 5% level of significance

^{NS} - Non significant

Table 31. Effect of family size and number of generations living together on number of traditional convenience foods prepared in Transitional and Dry zones of Karnataka

Variables	Ready- to- eat traditional convenience foods												
Family size	Transitional zone						Dry zone						
	Rural			Urban			Rural			Urban			
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c
Small (Upto 4)	13(43.3)	1(3.3)	0.20 _{NS}	17(56.7)	-	-	-	15(50.0)	0.56***	5(16.7)	9(30.0)	3(10.0)	0.27 _{NS}
Medium(5 to7)	12(40.0)	-		13(43.3)	-		-	12(40.0)		1(3.3)	5(16.7)	5(16.7)	
Large(8andabove)	4(13.3)	-		-	-		1(3.3)	2(6.7)		-	1(3.3)	1(3.3)	
Family size	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
Small (Upto 4)	14(46.7)	-	-	11(36.7)	6(20.0)	0.11 _{NS}	12(40.0)	3(10.0)	0.16 _{NS}	13(43.3)	4(13.3)	0.44*	
Medium(5 to7)	12(40.0)	-		7(23.3)	6(20.0)		10(33.3)	2(6.7)		5(16.7)	6(20.0)		
Large(8andabove)	4(13.3)	-		-	-		3(10.0)	-		-	2(6.7)		
Generations	Ready- to- eat traditional convenience foods												
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	41-60	r _c
One	16(53.3)	1(3.3)	0.16 _{NS}	22(73.3)	-	-	-	23(76.7)	0.12 _{NS}	6(20.0)	10(33.3)	4(13.3)	0.41*
Two	13(43.3)	-		8(26.7)	-		1(3.3)	6(20.0)		-	5(16.7)	5(16.7)	
Generations	Ready- to- use traditional convenience foods												
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	
One	17(56.7)	-	-	13(43.3)	9(30.0)	0.03 _{NS}	19(63.3)	4(13.3)	0.03 _{NS}	15(50.0)	5(16.7)	0.43**	
Two	13(43.3)	-		5(16.7)	3(10.0)		6(20.0)	1(3.3)		3(10.0)	7(23.3)		

r_c - Contingency coefficient, ^{NS} - Non significant, * - Significant at 5% level of significance, ** - Significant at 1% level of significance, *** - Significant at 0.5%

Table 32. Effect of family size and number of generations living together on number of traditional convenience foods prepared in Transitional and Dry zones of Karnataka

Variables	Ready- to- eat traditional convenience foods											
Family size	Hilly zone						Coastal zone					
	Rural			Urban			Rural			Urban		
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
Small (Upto 4)	-	14(46.7)	-	3(10.0)	13(43.3)	0.08 ^{NS}	6(20.0)	9(30.0)	0.45*	-	25(83.3)	-
Medium(5 to7)	-	15(50.0)		2(6.7)	11(36.7)		8(26.7)	3(10.0)		-	5(16.7)	
Large(8andabove)	-	1(3.3)		-	-		4(13.3)	-		-	-	
Family size	Ready- to- use traditional convenience foods											
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c
Small (Upto 4)	-	14(46.7)	-	3(10.0)	13(43.3)	0.08 ^{NS}	6(20.0)	9(30.0)	0.45*	1(3.3)	24(80.0)	0.09 ^{NS}
Medium(5 to7)	-	15(50.0)		2(6.7)	11(36.7)		8(26.7)	3(10.0)		-	5(16.7)	
Large(8andabove)	-	1(3.3)		-	1(3.3)		4(13.3)	-		1(3.3)	-	
Generations	Ready- to- eat traditional convenience foods											
	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c	Upto 20	21-40	r _c
One	-	18(60.0)	-	4(13.3)	19(63.3)	0.04 ^{NS}	12(40.0)	9(30.0)	0.09 ^{NS}	-	30(100.0)	-
Two	-	12(40.0)		1(3.3)	6(20.0)		6(20.0)	3(10.0)		-	-	
Generations	Ready- to- use traditional convenience foods											
	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c	Upto 10	11-20	r _c
One	-	18(60.0)	-	4(13.3)	19(63.3)	0.04 ^{NS}	12(40.0)	9(30.0)	0.09 ^{NS}	1(3.3)	29(96.7)	-
Two	-	12(40.0)		1(3.3)	6(20.0)		6(20.0)	3(10.0)		-	-	

Figures in parenthesis indicate per cent values

*- Significant at 5% level of significance

***- Significant at 0.5% level of significance

r_c - Contingency coefficient

** - Significant at 1% level of significance

^{NS} - Non significant

Table 33. Traditional convenience foods available in Dharwad market (N=5)

Type		Products	Total
Ready-to-Eat			
Main course		Crisp jowar and bajra <i>roti</i>	2
Sweet (18)	<i>Laddus</i>	<i>Gulladaki, rajgiri, besan, boondi, ladagi, shenga, yellu, antinaunde and kobbari</i>	9
	<i>Holiges</i>	<i>Rava, shenga and yellu</i>	3
	Other desserts	<i>Atirasa, mandige, chiroti, shankarpali; shenga / yellu chikki</i>	6
Savory foods (33)	Snacks	Rice / chick pea <i>chakkalis</i> ; potato / tapioca / jackfruits / banana chips; <i>chivda, churmuri, nippattu, khara</i> , roasted ground nut, <i>sev</i> and <i>tengalu</i> .	13
	<i>Chutney</i> powders	Puffed chick pea dhal, <i>menthe hittu</i> , groundnut, niger, linseed and dry coconut.	6
	<i>Chutneys</i>	<i>Ranjaka</i> , garlic, red chilly and mesta	4
	Pickles	Garlic, mesta, mixed vegetables, green chilli, mango, lemon, citron, <i>amate kai</i> , tender mango and amla	10
Total			53
Ready-to-use			
Pasta		Vermicelli, <i>souti beeja</i> and <i>ugarattu</i>	3
<i>Papads</i>		Rice, sago, wheat, ragi, green gram dhal, black gram dhal	6
<i>Sandiges</i> and alike		Rice, sago, wheat, ragi, cowpea, pumpkin, onion and stuffed chillies	8
Total			17
Grand total			70

Table 34. Sale of traditional convenience foods in different seasons

Traditional convenience foods purchased			
Type	All season	Winter	Rainy
<i>Rotis, papads and pickles</i>	All season		
Pasta	Vermicelli and <i>souti beeja</i>	<i>Ugarattu</i>	<i>Ugarattu</i>
Snacks	Rice/ plain chick pea <i>chakkalis; chivda, churmuri, khara, sev and tengalu</i>	-	<i>Nippattu</i> , potato / tapioca/ jackfruits / banana chips
Sweet snacks	<i>Gulladaki/ ragi/ besan laddus; shenga/ yellu holige and shenga/yellu chikki.</i>	<i>Rajgiri/ avalakki/ ladagi/ shenga/ yellu/ antinunde/ kobbari laddus; atirasa, mandige, chiroti and shankarpali.</i>	<i>Rajgiri/ avalakki/ ladagi/ shenga/ yellu/ antinunde/ kobbari laddus; atirasa, chiroti and shankarpali.</i>
<i>Sandiges and alike</i>	-	<i>Sandiges</i> of rice, sago, wheat, ragi, cowpea, pumpkin, onion and stuffed chillies	-
<i>Chutney powders</i>	-	Puffed chick pea dhal, <i>menthe hittu</i> , groundnut, niger, linseed and dry coconut	Puffed chick pea dhal, <i>menthe hittu</i> , groundnut, niger, linseed and dry coconut

Table 35. Procurement sources of traditional convenience foods in the market

Procurement sources of traditional convenience foods		
Locally procured		Total
Ready-to-eat (41)	<i>Gulladaki, rajgiri, ragi, avalakki, besan, boondi, ladagi, shenga, yellu, antinaunde and kobbari laddus; rava, shenga, yellu holiges; atirasa, shenga/ yellu chikki; mandige, chiroti, shankarpali, crisp jowar roti and bajra roti rice, ragi, chick pea chakkalis; chivda, churmari, nippattu, sev, tengalu, roasted ground nut, khara, puffed chick pea dhal, menthe hittu, groundnut, niger, linseed, dry coconut, sesame chutney powders; ranjaka and sweet ranjaka chutneys</i>	52
Ready-to-use (11)	Rice, sago, ragi, green gram dhal, black gram dhal <i>papads</i> ; wheat, rice, ragi, sago, cowpea and onion <i>sandiges</i>	
Procured from other places		
Ready-to-eat (17)	Potato, tapioca, jackfruit, banana chips; <i>ranjaka</i> , sweet <i>ranjaka chutneys</i> ; garlic, mesta, mixed vegetables, green chilli, tomato, mango, lemon, citron, <i>amate kai</i> , tender mango and amla pickles	22
Ready-to-use (5)	Rice, sago, ragi, green and black gram dhal <i>papads</i>	

Table 36. Different processing units engaged in preparation of traditional convenience foods

Units	Foods procured	Total
Small Scale Unit	Crisp bajra and jowar <i>roti</i> ; <i>rava</i> , groundnut, sesame <i>holiges</i> ; <i>shenga / yellu chikkis</i> ; <i>mandige, atirasa, rice / ragi/ chick pea chakkalis, chivda, churmuri, nippattu, khara, sev, tengalu</i> , puffed chick pea dhal, <i>menthe hittu</i> , groundnut, niger, linseed, sesame, dry coconut <i>chutney powders</i> ; rice/ sago/ ragi/ wheat/ cowpea/ onion/ pumpkin <i>sandiges</i> ; stuffed chillies	33
Medium Scale Unit	Crisp jowar and bajra <i>roti</i> ; <i>gulladaki, rajgiri, avalakki, ragi, besan, boondi, ladagi, shenga, yellu, antinunde and kobbari laddus; shenga, yellu, rava holiges; shenga, yellu chikkis; chiroti, shankarpali and atirasa, rice / ragi / chick pea chakkali; potato/ tapioca/ jackfruit / banana chips; chivda and churmuri, garlic, mesta chutneys</i> ; mixed vegetables, green chilli, tomato, mango, lemon, citron, <i>amate kai</i> , tender mango and amla pickles; rice, green gram dhal and black gram dhal <i>papads</i> ; rice/ sago/ ragi/ cowpea/ onion <i>sandiges</i> ; stuffed chillies.	49
Large Scale Unit	Garlic, mesta, mixed, green chilli, tomato, mango, lemon, citron, <i>amate kai</i> , tender mango and amla pickles	11

winter and rainy season. Among the snacks rice / chickpea *chakkalis*, *chivda*, *churmuri*, *khara*, *sev* and *tengalu* a total of seven ready-to-eat TCFs were sold in all the seasons, on contrary the sales of *nippattu*, potato, tapioca, jackfruit and banana chips were more during rainy season. Among the sweet snacks a total of seven types of sweets (*gulladaki*, *ragi* and *besan laddus*, *shenga* and *yellu holiges* and *chikkis*) were found to be sold in all the seasons, but along with these other 11 types of sweet snacks were also sold (*rajgiri*, *avalakki*, *ladagi*, *shenga*, *yellu*, *antinunde* and *kobbari laddus*, *atirasa*, *mandige*, *chiroti* and *shankarpali*) specially more during winter season. Except *mandige* similar sweet snacks were sold more during rainy season which were found to be sold during winter season also. About eight types of *sandiges* and *sandige* like products (*sandiges* of rice, sago, wheat, *ragi*, cowpea, pumpkin, onion and stuffed chillies) were found to be sold only during winter season. *Chutney* powders of six types (puffed chick pea dhal, *menthe hittu*, groundnut, niger, linseed and dry coconut) found to be sold more during winter and rainy season.

Thus only *rotis*, *papads* and pickles were observed purchasing throughout the year (all season).

The source of procurement of TCFs for food shops in Dharwad is shown in Table 35. It was observed that totally 52 TCFs were procured locally out of which ready-to-eat were 41 types and ready-to-use were 11 types. The ready-to-eat foods procured were *laddus* (11), *holiges* (3), *chikkis* (2), other sweets (4), main course (2), savory snacks (10) and savory accompaniments which included *chutney* powders (7) and *chutneys* (2). Out of 11 types of ready-to-use TCFs, 5 types were *papads* and 6 types were *sandiges*.

A total of 22 types of TCFs were procured from other places which included ready-to-eat (17) and ready-to-use (5). The ready-to-eat TCFs included chips (4), *chutneys* (2) and pickles (11), where as ready-to-use TCFs (5) procured were *papads*.

The TCFs procured from different units to the shops of Dharwad market is depicted in Table 36. A total of 33, 49 and 11 TCFs were procured from small, medium and large scale units, respectively. Small scale units were engaged in preparation of *rotis* (2), *holiges* (3), *chikkis* (2), other desserts (2), savory snacks (9), *chutney* powders (7), *sandiges* (7) and dehydrated stuffed chillies which were procured by shops of Dharwad.

Medium scale units were engaged in preparation of *rotis* (2), *laddus* (10), *holiges* (3), *chikkis* (2), other desserts (3), savory snacks (9), *chutneys* (2), pickles (9), *papads* (3), *sandiges* (5) and dehydrated stuffed chillies, which were procured by the shops of Dharwad market. The TCFs procured from the large scale unit included pickles of 11 types.

Thus it was reported that maximum number of TCFs were procured from the medium scale unit (49).

Frequency and quantity of TCFs supplied to the market of Dharwad is reported in Table 37. The foods were mainly procured weekly or fortnightly and monthly. The ready-to-eat foods procured weekly or fortnightly were crisp bajra and jowar *rotis* in 1-10 kg quantity. The sweets included *laddus* (11), *holiges* (3) and other desserts (6), procured were in smaller quantities from 2-5 kg. The savory foods procured weekly or fortnightly included snacks (13), *chutney* powders (7) and *chutneys* (2) procured were in smaller quantities from 1-5 kg. Among the foods procured monthly pickles (12) were procured in larger quantities 5-10 kg. The foods like *papads* (5) and *sandiges* (7) and dehydrated stuffed chillies were procured weekly or fortnightly and monthly, which were procured in smaller quantities from 1-3 kg.

The TCFs were classified based on the gender of preparation, which were supplied to the shops of Dharwad (Table 38). The foods prepared by only women included *rotis* (2), *holiges* (*rava*, *shenga* and *yellu*), other desserts (*mandige*, *atirasa*, roasted groundnut), *chutney* powders (puffed chickpea dhal, groundnut, niger, linseed, *menthe hittu* and dry coconut), pasta products (*vermicelli*, *souti beeja* and *ugarattu*), *sandiges* (rice, wheat, sago, *ragi*, cowpea, onion and pumpkin), *papads* (rice, *ragi*, wheat, sago, green gram dhal, black gram dhal) and dehydrated stuffed chillies. Only *chiroti* and *shankarpali* (other desserts) were prepared by men.

The TCFs prepared by both men and women included *laddus* (10), *chikkis* (2), *chakkalis* (2), chips (2), *chivda*, *churmuri*, *sev* *tengalu*, pickles (11) and *chutneys* (2). Thus maximum number of TCFs was prepared by women compared to men.

Table 37. Frequency and quantity of traditional convenience foods supplied to the market

Type	Products	Quantity
Foods procured weekly or fortnightly		
Ready-to-Eat		
Main course	Crisp bajra and jowar <i>roti</i>	1 – 10kg.
Sweets	<i>Shenga, yellu, besan, gulladaki, rajgiri, boondi, ragi, antinunde, ladagi, avalakki and kobbari laddus</i>	3 – 5 kg.
	<i>Shenga, yellu and rava holiges</i>	3 kg.
	<i>Atirasa, shenga / yellu chikki; mandige, chiroti and shankarpali</i>	2 – 4 kg.
Savory	Rice/ ragi/ chick pea <i>chakkalis</i> ; jackfruit/ banana/ potato/ tapioca chips; <i>chivda, churmuri, khara, nippattu, sev and tengalu</i>	2 – 5 kg.
	Groundnut, puffed chick pea dhal, linseed, niger, sesame, <i>menthe hittu</i> and dry coconut <i>chutney</i> powders	1 – 2 kg.
	<i>Ranjaka</i> and sweet <i>ranjaka chutneys</i>	2 – 5 kg.
Foods procured monthly		
Pickles	Mango, lemon, garlic, mixed vegetables, green chilli, tomato, citron, <i>amate kai</i> , mesta, onion, tender mango and amla	5 – 10 kg.
Ready to use		
Foods procured weekly or fortnightly		
<i>Papads</i>	Rice, sago, green gram dhal, black gram dhal and ragi	2 – 3 kg.
Foods procured monthly		
<i>Sandiges</i>	Rice, ragi, wheat, sago, cowpea, onion and pumpkin	1 – 3 kg.
Dehydrated	Stuffed chillies	

Table 38. Classification of traditional convenience foods according to the gender of person preparing

Gender	Traditional convenience foods
Women only	Crisp jowar, bajra <i>rotis</i> ; rava/ <i>shenga/ yellu holiges</i> ; <i>mandige, atirasa</i> , roasted groundnut, puffed chick pea dhal, <i>menthe hittu</i> , groundnut, niger, linseed, dry coconut <i>chutney</i> powders; vermicelli, <i>souti beeja, ugarattu</i> , rice, wheat, sago, ragi, cowpea, onion, pumpkin <i>sandiges</i> ; rice, ragi, wheat, sago, green gram dhal, black gram dhal <i>papads</i> and stuffed chillies
Men only	<i>Chiroti</i> and <i>shankarpali</i>
Both	<i>Guladaki, rajgiri, avalakki, ragi, besan, boondi, shenga, yellu, antinunde, kobbari laddus; shenga, yellu chikkis</i> ; chick pea, rice <i>chakkalis</i> ; potato, tapioca, jackfruit, banana chips; <i>nippattu, chivda, churmuri, sev, tengalu, khara</i> , garlic, mixed vegetables, green chilli, mesta, mango, lemon, citron, <i>amate kai</i> , tender mango, amla, onion pickles; and <i>ranjaka, sweet ranjaka chutneys</i>

Table 39. Age wise preferences in purchase of traditional convenience foods

Traditional convenience foods	Age groups
<i>Gulladaki, rajgiri, ragi, avalakki, besan and boondi laddus; shenga and yellu holiges</i>	All age groups except elderly group
<i>Ragi, besan laddus; pedha and sev</i>	Elderly
Condiments and <i>papadi</i>	Children
<i>Chakkali, khara</i> ; banana / jackfruit / potato chips.	Children and adolescent boys
<i>Chakkali, khara</i> , banana / jackfruit / potato chips; <i>chivda</i> and <i>churmuri</i>	Adolescent girls
<i>Chakkali, khara, chivda, churmuri, kodbale</i> , roasted ground nut, crisp jowar/ bajra <i>roti</i> ; rice, sago, cowpea, pumpkin <i>sandiges</i> ; stuffed chillies	Adults
Mixed vegetables, green chilli, mango, lemon, sweet-mango, citron, tender mango, amla pickles; ragi, green gram dhal and black gram dhal <i>papads</i>	Adolescent and adults
Puffed chick pea dhal, <i>menthe hittu</i> , groundnut, niger, linseed, dry coconut <i>chutney</i> powders; <i>ranjaka</i> and sweet <i>ranjaka chutneys</i>	Adolescent girls and adults
Vermicelli, <i>souti beeja</i> and <i>ugarattu</i>	Adult women
Vermicelli	Adult man

Table 40. Nutrient composition of selected traditional convenience foods

Foods	Serving size		Energy (Kcal)	Protein (g)	Fat (g)	Carbohydrate (g)	Carotene (mg)	Calcium (mg)	Iron (mg)
	g	Measure n							
Jowar <i>roti</i>	40	2	140(350)	4.16 (10.4)	0.76 (1.9)	29.04(72.6)	18.8 (47.0)	10.0 (25.0)	1.64 (4.1)
Bajra <i>roti</i>	40	2	137 (343)	4.43 (11.1)	2.37(6.0)	24.8(62.0)	53.52 (133.8)	32.64 (81.6)	3.02 (7.55)
<i>Shenga laddu</i>	25	1	189(756)	6.15(24.6)	7.11(28.44)	18.54(74.16)	15.9(63.6)	15.54(62.16)	1.02 (4.08)
<i>Besan laddu</i>	25	1	145 (580)	2.84(11.36)	7.26(29.04)	17.15(68.6)	141.5(566.0)	8.66 (34.64)	0.78 (3.12)
<i>Ragi laddu</i>	25	1	139(556)	1.13(4.52)	6.72(26.88)	18.58(74.32)	131.13(524.52)	89.35(357.4)	0.60 (2.4)
<i>Shenga chikki</i>	20	2	98(490)	2.88(14.4)	4.51(22.55)	11.38(56.9)	4.11(20.55)	17.92(89.6)	0.51 (2.55)
Potato chips	23	½ k	108 (470)	1.30(5.65)	3.95 (17.17)	16.71 (72.65)	20.32 (88.35)	8.51 (37)	0.35 (1.52)
Banana chips	14		42 (300)	0.56 (4)	2.10 (15)	5.16 (36.86)	12.2 (87.14)	4.24 (30.29)	2.28 (16.29)
Rice flakes <i>chivda</i>	60	1 plate	225(375)	5.42(9.03)	0.78(1.3)	29.12(48.53)	15.68(26.13)	65.45(109.08)	10.15(16.92)
Puffed rice <i>chivda</i>	60	1 plate	275(458)	5.98(9.97)	8.94(14.9)	42.7(71.17)	24.72(41.2)	33.48(55.8)	3.72(6.2)
Coated groundnut	30		179(596)	6.87(22.9)	13.35(44.49)	7.74(25.8)	13.5(45.0)	24.75(82.5)	0.72(2.4)
Groundnut <i>chutney</i> powder	10	1 t	55(550)	2.39(23.9)	3.92(39.2)	2.95(29.5)	3.4(34.0)	10.35(103.5)	0.27(2.7)

Figures in the parenthesis indicates nutritive values per 100 g

4.5. The performance of traditional convenience foods in market among different populations

Purchase of TCFs from the market of Dharwad by different age groups is depicted in Table 39. It was observed that *gulladaki*, *rajgiri*, *ragi*, *avalakki*, *besan* and *boondi laddus*; *shenga* and *yellu holiges* were purchased more by all the age groups except elderly group. Where as, children preferred to purchase more of junk foods, condiments and sweets. With regard to adolescent group, they purchased more of savory and sweet snacks and accompaniments among the ready-to-eat TCFs, where as among the ready-to-use TCFs more of *papads* were purchased. Maximum of the ready-to-eat and use TCFs were found purchasing by adults, where as only *ragi*, *besan laddus*; *pedha* and *sev* were purchased by the elderly group.

4.6. Nutrient computation of fast running TCFs

The nutrient composition of the fast running traditional convenience foods (per, serving and per 100g) in Dharwad market is depicted in Table 40. The nutrient computed TCFs were main course (crisp bajra and jowar *rotis*), *laddus* (*shenga*, *besan* and *ragi*), *shenga chikki*, savory snacks (potato and banana chips, rice flakes and puffed rice *chivdas* and coated ground nut) and *chutney* powder (ground nut). It was observed that the calorific value of the fast running TCFs ranged from 300 to 756 Kcal per 100g in banana chips and *shenga laddu*, respectively, banana chips contributed 42 Kcal and puffed rice *chivda* 275 Kcal on per serving basis. Protein content ranged between 4 to 24.6g per 100g in banana chips and *shenga laddu*, respectively. However, on per serving basis, it was .56 to 6.87g in banana chips and coated ground nut, respectively. It was also found that the fat content in rice flakes *chivda* was 1.3g per 100g or 0.78g per serving and coated ground nut recorded 44.49g per 100g or 13.35g per serving.

The study showed that the carbohydrate value ranged from 2.95 to 29.12g per serving (ground nut *chutney* powder and rice flakes *chivda*). On per 100g basis it was observed that carbohydrate content was least in coated ground nut (25.8g) and highest in *ragi laddu* (74.32) among the fast running TCFS in Dharwad market. β - carotene was found highest in *besan laddu* (141.5 and 566mg) on per serving and per 100g basis, where as least was observed in ground nut *chutney* powder (3.4mg) on per serving basis and *shenga chikki* (20.55mg) on per 100g basis. Where as calcium was observed to be highest in *ragi laddu* on both per serving and per 100g basis (89.35 and 357.4mg) , where as banana chips indicated least calcium content (4.24mg) on per serving basis and jowar *roti* (25mg) on per 100g basis. Rice flakes *chivda* was rich in iron content (10.15mg per serving or 16.92mg per 100g, respectively), where as groundnut *chutney* powder (0.27mg per serving and potato chips (1.52 per 100g) were poor source of iron content.

Therefore it was observed that *shenga* and *ragi laddus* were more nutrient dense compared to other fast running TCFs in Dharwad.

5. DISCUSSION

One's physical, nutritional, emotional and spiritual health depends on food that is delicately interwoven in the fabric of tradition and culture to provide sense of belongingness, ethnic orientation and emotional security. The foods habitually and occasionally consumed are determined by socio- economic, cultural and geographical determinants. The phenomenal progress achieved in modern days although has altered life style and food habits to a great extent in developed countries; the food ethnicity is still deep rooted in India – a land of diverse cultures, agro climatic zones and rich food heritage. No doubt there is a gradual shift in food habits from home cooked ethnic foods to Indianized global foods. There is still a hidden yearning for traditional foods, including those that provide convenience and variety to diet. The rich traditional food heritage which is passed on from one generation to other by word of mouth is going into oblivion in the modern days due to various reasons. The results of the study conducted in Karnataka to document the traditional convenience foods (TCFs) are discussed in this chapter.

The diverse and rich food heritage of Karnataka was evident in documentation of TCFs across the four zones of Karnataka (Table 2). A total of 162 TCFs were documented in four zones of Karnataka, which could be categorized into ready-to-eat (106) and ready-to-use (56) foods. The ready-to-eat foods comprised of foods served in main course, desserts, savory snacks and food accompaniments to appease the taste preferences with different organoleptic profiles. Usually the regional foods were the base ingredients across the regions. Cereal was the most common base for as many as 60 foods. Compared to other foods based on vegetables (27), pulses, oilseeds and fruits (20 each), fish and meat (9), milk (3) and sugar / jaggery (1), respectively. This could be due to cereals dominating the cropping pattern and foods consumed in all the zones.

Unique TCFs specific to each region were observed in all the zones. Cereal based main foods, sweets, snacks, food accompaniments were documented. Thinly patted bajra/ jowar *rotis*, *gulladaki* and *rajgiri laddu* and *tambittu* were reported by the respondents. Various types of unique cereal based stuffed sweet pancakes (*holiges*) were prepared by the respondents of all zones (Table 4). *Surali holige* was unique for dry and transitional zone with elaborate method of dry baking, preparation (Table 5). Simple less elaborate unique deep fat fried *sakkari*, *bellada* and *rava holiges* were documented in coastal and hilly zones. *Holiges* were prepared not only as TCFs during non- ceremonious occasions, but also during festivals. This was also reported by Inamdar *et al.* (2005), who documented festival foods of North Karnataka. Oilseed based *holiges*; peanut and sesame were commonly prepared in dry and transitional zones, which might be due to the cropping pattern and of food habits.

In coastal and hilly zones the desserts *atirasa*, *akki kajjaya*, *bola gulli* and *panchakajjaya* were unique cereal based region specific TCFs. Simple methods were employed for preparation of such foods. Preparation of *atirasa* was also documented in Tamil Nadu by Devdas *et al.* (1999), where paddy is a common crop grown. *Madli* a unique food of dry and transitional zones was also documented by Pattan *et al.* (2001) and Inamdar *et al.* (2005).

The ready-to-use foods consisted farina, pasta, flours, *papads* and *sandiges* which were unique and region specific. More variety of ready-to-use TCFs, were most commonly prepared by respondents of dry and transitional zones, compared to other zones. This might be due to the availability of leisure hours in these zones during summer and winter, where the suitable weather conditions prevail. These foods added variety and sensory quality to the diet apart from being convenient. It is interesting to note that the pasta products resembled the shapes of cucumber (*souti beeja*), *angikasi* (like modern ribbon pasta), *gulagi* (small tablets), *gauli*, *paradi* and *ugarattu*. Another interesting product was *anekallu* (english translation hail stone), where in different method and indigenous equipments were used. The starch from soaked wheat was extracted and dropped in small droplets, on a muslin cloth. The droplets were allowed to dry and stored. This was unique to dry zone. These preparations indicate the utilization of resources suitably to add to variety and convenience to ones diets, beside efficient use of leisure time in rain fed agriculture.

Less variation in the preparation of cereal based ready-to-use foods were observed in hilly and coastal zones, where in paddy based foods such as rice *papads*, vermicelli,

sandiges and semolina were common in contrast to jowar *sandige* of dry zone. *Pitti* flour (ragi based) was another unique ready-to-use cereal based TCF of coastal zone, which was used as a supplementary food for children.

With respect to pulse based TCFs (20), ready-to-eat (12) and ready-to-use foods (8) were documented across the zones (Table 2). Many of these were region specific such as *ladagi laddu* of dry zone and *panchakajjaya* and *kadale panchakajjaya* of coastal and hilly zones. Such other sweets were also offered to deities as *prasadam* in the regional temples. Chickpea being a major crop in the dry and transitional zones, is utilized in various foods such as sweets, savory snacks and *chutney* powders. Cowpea a rain fed crop of the region was used in the preparation of *sandige* and ready-to-use flour for *hurali sangati* which was cooked in the form of porridge during rainy seasons to keep the body warm.

Oilseeds were used in different ways (Table 2), as ready-to-eat and ready-to-use in the form of *laddus*, *holiges* and other desserts. Malhotra *et al.* (2004) also documented oilseed based traditional *laddus* of *alsi*, *sundh*, coconut, groundnut, *gachak* groundnut and green gram from Himachal Pradesh.

Special uses as thickeners and taste enhancers in traditional cuisine was also observed in the region. Such usage was not observed in hilly and coastal zones, might be due to the availability of fresh coconut as a food adjunct and taste enhancer.

It is noteworthy to mention that the respondents of hilly and coastal zones traditionally prepared cashewnut *burfi* as convenient sweet foods might be due to availability or traditional food habits. Large scale production technology for cashewnut *burfi* was standardized by Rao *et al.* (1993) using cashewnut, whole milk powder, sugar, hydrogenated fat, cardamom powder and water. The product exhibited a shelf life of three months at 37°C.

In the present investigation it was observed that fruits and vegetables were transformed most scientifically into TCFs of varied sensory characteristics, optimally utilizing the seasonal gluts, avoiding wastage (Table 2). A total of 27 vegetable and 20 fruit based products composing of pickles, *chutneys*, *chutney* powders, sweets, acidulants, *papads*, chips and unique fermented foods like *karindi* were documented, to be adding to convenience and variety to diets of people of all zones.

Special dehydrated vegetable based TCFs (Table 13) such as *balakada menasinkai* (spiced chilli) and *kumbal sandige*, were documented among the respondents of all zones. The practice of preparation of dehydrated cluster beans, chickpea and *methi* leaves by processing and storage for future use was observed among the respondents of dry zone.

The respondents of different zones added variety to diet through wise utilization of regional produce such as *mekkikai* (*Cucumis anguria*), *mangani беру* (*Coleus barbatus*), *amsol* (*Garcinia indica*), *karonda* (*Carrisa grandiflora*), tender bamboo shoots, brinjal, *midigai*, *karl kai* and *amate kai* were utilized traditionally as convenient foods in the form of pickles in hilly and coastal zones. These respondents also reported the efficient use of local produce in the form of fruit based TCFs such as jackfruit *burfi*, *papad*, *sata*, banana *halwa* and salted jackfruit.

In contrast to plant TCFs, non vegetarian TCFs were very few (9), exclusively observed only in coastal and hilly zones. Prawn and fish were transformed into *chutney*, *chutney* powder or pickles, fish powder, chicken and mutton chunks and dried fish.

With respect to TCFs based on milk and milk products, only three products (*pedha*, *kunda* and *kobbari susla* / *ginnada wadi*) could be observed to be prepared in different zones of Karnataka. *Kunda* and *pedha* were although consumed as TCFs, were seldom prepared at home. People preferred to purchase it (Table 18). However a unique TCF based on colostrum of cow / buffalo's *kobbari susla* was prepared from *ginnada wadi* (coagulated colostrum) in coastal and dry zones.

Spices too contributed to TCFs across the region, viz., fenugreek seed based *chutney* powder (*menthe hittu*), pepper and fenugreek based *karakina pudi* were documented. *Menthe hittu* was meant for consumption by people of all ages and physiological conditions, where as *karakina pudi* was specifically given to lactating mothers in transitional zone of Karnataka.

Several TCFs claimed to possess health benefits by respondents (Table 17), were recorded across the zones of Karnataka viz., *hurali sangati*, foxtail millet flour, *pitti*, *karakina pudi*, *jolada nuchhu*, *aalvi burfi* and *bola gulli* were unique foods recorded. The ingredients used in these preparations were pepper, fenugreek seeds, garden cress seeds; sorghum, foxtail millet and ragi contain several nutraceutical components, which might explain the claimed health benefits.

In preparation of TCFs it was observed that respondents employed energy saving devices and used refined ingredients (flour and sugar). This could be explained by modernization, urbanization and women employment away from homes. Owing to these reasons and availability in the market, most of the TCFs such as vermicelli, *papads*, pickles, *chutneys*, *chutney* powders, *sandiges*, etc; were being purchased from the local market (Table 18).

Another interesting feature was the use of indigenous equipments in preparation of several products such as vermicelli, *anekallu*, *gulagi*, *paradi*, *chutneys*, *chutney* powders, flours and semolina. Traditionally vermicelli was prepared using a wooden plank, where as another pasta product *paradi*, where in the stick was used for the preparation similar to ear bud stick made of copper. Another pasta product i.e., *anekallu* was prepared with starch extracted from wheat using double thorns inserted in a grater. Nowadays these indigenous equipments and tools are fading for the existence.

Karnataka is a land of rich cultural heritage, where different types of customs, tradition, varied climatic conditions are observed. Therefore a study was conducted to evaluate the influence in different locations. Locational differences in preparation of TCFs were evident across the zones both in urban and rural areas (Table 10). Urban respondents revealed more number of TCFs (134) as compared to rural respondents in all the zones (131). This might be due to the strong adherence to culture and tradition in rural communication. Easy availability of eateries in urban areas might also affect the preparation. Zonal comparison revealed that more TCFs were documented by the respondents of dry zone (92), followed by transitional (81), coastal (74) and hilly zone (73). But when the number of TCFs actually prepared was compared, it was observed that rural respondents prepared more number of TCFs of various kinds. Accordingly, more TCFs prepared by dry rural (52), followed by hilly rural (44), transitional (28) and coastal rural communities (17). This might be due to climatic variations and cropping pattern and engagement of respondents in farming activities. The respondents of hilly and coastal zones were engaged in intensive agricultural farming system and hence had less time for preparation of such convenience foods. Also, availability of variety of fresh foods could also have influenced the preparation.

In all the regions cereals dominated as main ingredient in preparation of TCFs, followed by pulse, vegetable based, oilseed and fruit based. Least were from animal based in all the regions. Among each location it was observed that the cereal, pulse, oilseed, vegetables, sugar / jaggery based TCFs were prepared more by the dry rural population, where as among fruit and fish and meat based TCFs were prepared / documented more in the hilly zones.

The contingency co-efficient revealed a highly significant association of education in preparation of ready-to-eat TCFs among hilly and coastal zone (Table 21). Further highly significant influence of education was observed among rural respondents of coastal zone (Table 24). On over all basis, impact of education was pronounced among rural respondents of all zones (Table 22), where as with regard to ready-to-use TCFs preparation, highly significant association of education among the coastal zone (Table 21). Among the locations it was observed that there was highly significant association among coastal rural respondents with preparation of both ready-to-eat and use TCFs. It was evident that as the level of education increased, the preparation of ready-to-eat TCFs increased among the rural respondents of all the zones. This might be due to increased leisure times for the high school educated rural women. However with graduation level, the association decreased may be due to employment away from homes on paid jobs. This was clearly evident by contingency coefficient analysis in different zones of Karnataka (Table 21). It was observed that respondents, employment away from home on paid job, significantly affected the preparation of TCFs in coastal and urban hilly zones, which was also depicted with respect to ready-to-eat TCFs in urban dry zones (Table 23). On overall basis the employed urban respondents prepared less variety of ready-to-use TCFs (Table 22), due to lack of time or increased

affordability for purchase of ready-to-eat foods from the market (Table 18). It was observed that more TCFs were prepared by housewives compared to working women, which could be due to availability of sufficient time for preparation of such foods.

The type of families viz., nuclear or extended types was associated with preparation of TCF significantly (Table 28) in urban coastal zones, where nuclear families prepared more ready-to-eat TCFs compared to extended and joint families, implicating free decisions of the respondents with ready-to-use TCFs (Table 27). On overall basis the nuclear families both in urban and rural location prepared more ready-to-use TCFs than the extended and joint families (Table 26). This might be due to lack of helping hands in nuclear families. In extended and joint families help for domestic and culinary works would be available which could explain the association.

Preparation of TCF was significantly associated with age of family members (Table 25 to 28). The number of preparation of TCFs significantly decreased with increased number of members less than 18 years in families belonging rural dry and urban hilly zone. Interestingly, although more TCFs were prepared in rural dry (52) and urban hilly zones (42), the number of preparation (Table 10), significantly decreased in families having more members below 18 years age. This could be due to the necessary attention that has to be paid for the younger members of the family for education, feeding and other works of children. This also may be due to preparation of fresh foods rather than stored convenient foods for feeding younger members of the family.

Family size exhibited significant association with number of TCFs prepared in dry zone especially ready-to-eat in rural and ready-to-use in urban families (Table 31). Similar trend was observed in rural coastal families (Table 32). With increased family size the number of preparation decreased significantly, might be due to increased work load in the large families. The preparation of TCFs in dry and coastal zone significantly decreased in the families where more than one generation were living together (Table 29), especially in urban families of dry zone (Table 31).

Globalization of food has increased tremendously and helped the availability of processed foods. The traditional and the TCFs have flooded the food outlets even in small townships. The survey of food shops in Dharwad recorded as many as 70 types of ready-to-eat (53) and ready-to-use TCFs (17). Agro climatically Dharwad falls in transitional zone where the household survey revealed 83 types of TCFs, among which 26 were prepared by at least 50% of the population. This could be justified by ready availability of ready-to-eat TCFs (53) in the market. The household survey of randomly selected respondents although revealed very less purchasing pattern of TCFs (Table 18), the sales of TCFs was reported to be satisfactory by the shopkeepers. This could be the heterogeneous nature of population carrying different socio-economic backgrounds.

A total 18 types of sweets, 33 types of savory foods among ready-to-eat and savory ready-to-use were of 17 types found in the shops of Dharwad market. The pasta ready-to-use TCFs were commonly purchased (Table 34), throughout the year, where as the oilseed based, fried ready-to-eat and to be fried ready-to-use TCFs (Table 34), were purchased during rainy and winter season, reported by the owner of the shop. This might be due to consumption of fried foods gives more satiety and also believed that these types of foods helps to keep the body warm. The other remaining pasta was purchased throughout the season.

The procurement of TCFs almost was made locally, but some of the pickles and papads were outsourced from cottage industries. Self help group members and small entrepreneurs supplied the TCFs. A noteworthy mention must be made about the customers who always flooded the shops on non festive as well as festive days. Thus these food outlets not only provided variety of TCFs to consumers, they provided a means of livelihood to local entrepreneurs, besides appeasing yearning for traditional foods.

Various ingredients are used in preparation of foods and this influences the nutrient composition. Computation of nutrient composition indicated interesting results (Table 40). Most dense in calories per serving was the puffed rice *chivda* (275 Kcal per serving) owing to the judicious inclusion of groundnut seeds and oil. Peanut *laddu* was another dense food (756 Kcal per 100g), suitable for population requiring energy foods. Banana chips despite being a

fried TCF recorded least calorific value (42 and 300g Kcal per serving and per 100g). This could be due to the low calorific content of raw banana.

TCFs such as coated groundnut not only provided good amounts of protein (6.87 and 13.35g per serving and per 100g), also had crunchy texture, spicy taste and flavor soothing the taste buds of consumers. Ragi *laddu* was a value added delicacy providing good amounts of calcium (89.35mg per serving and 357.4mg per 100g), besides providing macronutrients. Thus it was found that variation in nutrient composition of TCFs was evident.

6. SUMMARY AND CONCLUSIONS

This study of documentation of traditional convenience foods (TCFs) of Karnataka was conducted in four different zones both rural and urban Karnataka during 2008 – 09 with the objectives to document the TCFs in different zones of north Karnataka, know the factors influencing preparation of TCFs, ascertain the availability, source and preference of such foods in the market and compute nutrient composition of selected foods.

Documentation of TCFs through survey of randomly selected households by personnel interview method and PRA approach. Middle income families of urban and rural locations (30 each) in transitional zone (Dharwad district), dry zone (Gokak taluk), hilly zone (Dandeli town) and coastal (Karwar taluk) were interviewed by the investigation. PRA techniques were conducted in other parts of each zone to substantiate and support the data collected from personnel interview method. A semi structured questionnaire was used for data collection, where in knowledgeable elderly women or the women in charge of the kitchen were contacted.

Food shops of Dharwad were visited to know the availability of TCFs and purchasing preferences of consumers. Nutrient composition of fast running TCFs were computed, using Annapurna software. Salient findings are summarized as follows:

- A majority of respondents were literate housewives, single generation, nuclear families having vegetarian food habits in both urban and rural location.
- Ready-to-eat (106) and ready-to-use (56) comprised the TCFs (162) of different zones of Karnataka.
- Cereal based TCFs (60) dominated the category with ready-to-eat (32) and ready-to-use foods (28). The ready-to-eat TCFs comprised of main course items (2), desserts (21), savory snacks and various accompaniments (9) and ready-to-use comprised savory TCFs (28) with varied sensory characters.
- Over all the ready-to-eat comprised of sweets (50), savory snacks (15) and accompaniments (41); and ready-to-use TCFs comprised of total savory (56).
- Region specific unique foods were identified in each category of TCFs, like *gulladaki laddu* of transitional zone, *rajgiri*, *ladagi* and *tambittu* were the unique *laddus* of dry zone. Maximum of the *holiges* prepared were of cereal group, which were unique type. Among desserts *madli*, *atirasa*, *akki kajjaya*, *bola gulli* and *panchakajjaya* of cereal group; *panchakajjaya*, *kadale panchakajjaya* and *halpi / putani karadantu* of pulse based, garden cress seed and cashewnut *burfis* of oilseed based, all fruit based desserts and *kakavi* of sugar and jaggery based and *ginnadawadi* of milk based were the typical sweet TCFs of different zones of Karnataka.
- Totally 17 types of ready-to-eat main savory TCFs were documented which included main course (2) and savory snacks (13) and side dishes (2).
- Ready-to-eat traditional convenient accompaniments (38) included *chutney* powders (10), *chutneys* (5), pickles and alike products (22) and a dehydrated product.
- Where as the ready-to-use TCFs (56) included farina including traditional pasta were maximum (13), where except vermicelli among pasta were unique. The other ready-to-use TCFs flours (9), *papads* (9), *sandiges* and chips (10), thickeners and taste enhancers (3), acidulants (3), dehydrated vegetables (5) and other products (4) were documented.
- It was noted that more number of TCFs were documented in urban communities, where as among the rural locations more number of TCFs were prepared by dry zone (52), followed by hilly zone (44). Among the urban communities maximum were prepared by hilly (42), followed by coastal zone (35).
- The ready-to-eat TCFs of Karnataka were prepared maximum by fermentation method (23), followed by fried and sweetened (15), roasted and bounded with sugar / jaggery syrup (13). Where as maximum of ready-to-use TCFs were prepared by milling process (13).

- Maximum of the ready-to-eat TCFs (82) were prepared throughout the year and ready-to-use TCFs (40) were prepared during summer and winter. Also it was noted that maximum of the health based TCFs of Karnataka were prepared by transitional zone (5) compared to other zones.
- A modification of TCFs was observed, mainly for the sensory quality, convenience, economy, variety and to enhance the nutritional quality.
- Among the various factors influencing preparation of TCFs, education was found to be significantly associated with preparation of ready-to-eat TCFs (hilly and coastal zones, rural coastal zone and among rural communities of all zones) and also with ready-to-use TCFs (coastal zone and coastal rural respondents). Occupation was found to be significantly associated with preparation of both ready-to-eat (coastal zone, urban dry and hilly zone) and ready-to-use TCFs (hilly urban zone and overall among urban communities). Family type was also found to be significantly associated with both ready-to-eat (coastal zone, urban coastal and urban communities of all zones) and ready-to-use TCFs (urban dry zone).
- Family members less than 18 years was the another factor found to be significantly associated with preparation of both ready-to-eat TCFs (rural dry and urban hilly zone) and ready-to-use TCFs (rural dry and urban hilly zone and among urban hilly zone and overall urban communities of all zones). Family size and preparation of ready-to-eat (rural dry and coastal zones) and ready-to-use TCFs (urban dry and rural coastal zones) was found to have a significant association. Generation was the other factor found to have a significant association with preparation of ready-to-eat (dry and coastal zones, urban dry zone and also among urban communities of all zones) and ready-to-use TCFs (dry and coastal zones, urban dry zone and urban communities of all zones).
- Totally 70 TCFs were available in Dharwad market which included ready-to-eat (53) sweet *laddus*, *holiges*, desserts, main course and savory snacks, *chutney* powders, *chutneys* and pickles. And ready-to-use (17) included pasta, *papads* and *sandiges* and like products, where maximum of ready-to-eat (41) and ready-to-use TCFs (11) were procured locally which were supplied in the quantity of 1 to 10 Kgs.
- Nutrient composition of fast running TCFs in Dharwad market revealed that *shenga laddu* was a rich source of calories and protein, where as *ragi laddu* providing 89.35mg per serving of calcium and rice flakes *chivda* 10.15mg per serving of iron were found to have good mineral content compared to other TCFs.

Future line of work

1. Standardization of TCFs of different zones for computation of nutrient composition could add more information for revival of health promoting traditional foods.
2. Studies on entrepreneurs engaged in supplying TCFs to the markets.

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APPENDIX I

TRADITIONAL CONVENIENCE FOODS OF KARNATAKA

I GENERAL INFORMATION

Rural /Urban:

Name of the respondent

Education:

Age:

Occupation:

Type of family: Nuclear / Joint / Extended

Number of generations living together: one / two / three

II FAMILY COMPOSITION/ ECONOMIC STATUS:				
Members≤18 years				
No	Name	Male	Female	Education
1.				
2.				
3.				
4.				
5.				
6.				
7.				
Total				

Members≥18 years						
No	Name	Male	Female	Education	Occupation	Income(m/y)
1.						
2.						
3.						
4.						
5.						
6.						
Total						

Total family members

Male

Female

Income from Lands

Type of Land	Area	Crops	Income /y
Total			
Income from other sources:			
1			
2			
3			
Total			
GRAND TOTAL			

2) Are you on job away from home?

If yes, average number of hours away from home:

III. DIETARY INFORMATION

Vegetarian / Non- vegetarian/Eggatarian

Habitual diet pattern			
No	Meal	Approx time	Foods consumed
1.	Early morning		
2.	Breakfast		
3.	Brunch		
4.	Lunch		
5.	Snacks		
6.	Dinner		
7.	Any other		

IV INFORMATION ABOUT TRADITIONAL CONVENIENCE FOODS (TCFs).

A. What are the TCFs you know?		
No	Base ingredients	Products
1.	Cereals , Pulses , Oilseeds	
2.	Vegetables	
3.	Fruits	
4.	Milk, milk products	
5.	Meat, Egg,	
6.	Fish, Sea foods	
7.	Any others	

F. TCF according to storage life.				
No.	Duration	Product	Package	Mode of storage
1.				
2.				
3.				
4.				
5.				
6.				

G. What are the TCFs you prepare at home		
No.	Products	Frequency of preparation
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		

H. What are the TCFs purchased from the market		
No.	Products	Frequency of Purchase
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

I. Name the TCFs you have modified in terms of ingredients and methods of preparation.				
No	Products	Ingredients	Method	Reason
1.				
2.				
3.				
4.				
5.				

V) Opinion about TCF.

i) Source of information about TCF

- 1
- 2
- 3
- 4
- 5

ii) Would you like to buy TCFs. Yes / No
If yes, give details:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

ಕರ್ನಾಟಕದ ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳು

ಹಳ್ಳಿ / ಪಟ್ಟಣ

1) ಸಾಮಾನ್ಯ ಮಾಹಿತಿ :

ಹೆಸರು :

ವಿದ್ಯಾಭ್ಯಾಸ :

ಉದ್ಯೋಗ :

ವಯಸ್ಸು :

ಕುಟುಂಬ : ವಿಭಕ್ತ / ಅವಿಭಕ್ತ / ವಿಸ್ತೃತ

ಎಷ್ಟು ತಲೆಮಾರು : ಒಂದು / ಎರಡು / ಮೂರು

2) ಕುಟುಂಬದ ಮಾಹಿತಿ / ಆರ್ಥಿಕ ಸ್ಥಿತಿ :

ಹದಿನೆಂಟು ವರ್ಷದ ಕೆಳಗಿನ ಸದಸ್ಯರು				
ಸಂಖ್ಯೆ	ಹೆಸರು	ಗಂಡಸರು	ಹೆಂಗಸರು	ವಿದ್ಯಾಭ್ಯಾಸ
1.				
2.				
3.				
4.				
5.				
6.				
7.				
ಒಟ್ಟು				

ಸದಸ್ಯರು 18 ವಯಸ್ಸಿನವರು ಹದಿನೆಂಟು ವರ್ಷ ಮೇಲ್ಪಟ್ಟ ಸದಸ್ಯರು						
ಸಂಖ್ಯೆ	ಹೆಸರು	ಗಂಡು	ಹೆಣ್ಣು	ವಿದ್ಯಾಭ್ಯಾಸ	ಉದ್ಯೋಗ	ಆದಾಯ (ತಿಂಗಳ / ವಾರ್ಷಿಕ)
1.						
2.						
3.						
4.						
5.						
6.						
ಒಟ್ಟು						

ಒಟ್ಟು ಕುಟುಂಬದ ಸದಸ್ಯರು :

ಗಂಡು :

ಹೆಣ್ಣು :

ಕೃಷಿಯಿಂದ ಬರುವ ಆದಾಯ :

ಯಾವ ತರಹದ ಜಮೀನು	ಎಕರೆ	ಬೆಳೆಗಳು	ಆದಾಯ / ವಾರ್ಷಿಕ
ಒಟ್ಟು			

ಇತರೆ ಮೂಲಗಳಿಂದ ಬರುವ ಆದಾಯ :

1.		
2.		
3.		
ಒಟ್ಟು		
ಒಟ್ಟು ಮೊತ್ತ :		

3) ನೀವು ಉದ್ಯೋಗಸ್ತರೇ?

ಹೌದು / ಇಲ್ಲ

ಹೌದಾದರೆ, ಎಷ್ಟು ತಾಸು ಮನೆಯ ಹೊರಗಡೆ ಕೆಲಸ ಮಾಡುವಿರಿ.

4) ಆಹಾರ ಸೇವನೆಯ ಮಾಹಿತಿ :

ಸಸ್ಯಾಹಾರಿ / ಮಾಂಸಾಹಾರಿ / ಮೊಟ್ಟೆ ಸೇವಿಸುವವರು
ದೈನಂದಿನ ಸಾಮಾನ್ಯ ಆಹಾರ ಪದ್ಧತಿ :

ಸಂಖ್ಯೆ	ಊಟ	ಸಮಯ	ಸಾಮಾನ್ಯವಾಗಿ ಸೇವಿಸುವ ಆಹಾರಗಳು
1.	ಉಪಹಾರ		
2.	ಊಟ		
3.	ಮಧ್ಯಾಹ್ನದ ಉಪಹಾರ		
4.	ರಾತ್ರಿ ಊಟ		
5.	ಇತರೆ (ವಿವರಿಸಿರಿ)		

5) ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳ ಬಗ್ಗೆ ಮಾಹಿತಿ.

ಅ) ನಿಮಗೆ ಗೊತ್ತಿರುವ ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳು ಯಾವುವು?

ಸಂಖ್ಯೆ	ಆಧಾರಿತ ಆಹಾರ	ಆಹಾರ ಹೆಸರು
1.	ಏಕದಳ, ದ್ವಿದಳ ಧಾನ್ಯ ಹಾಗೂ ಎಣ್ಣೆ ಕಾಳುಗಳು	
2.	ತರಕಾರಿಗಳು	
3.	ಹಣ್ಣು	
4.	ಹಾಲು ಮತ್ತು ಹಾಲಿನ ಪದಾರ್ಥಗಳು	
5.	ಮಾಂಸ, ಮೊಟ್ಟೆ	
6.	ಮೀನು, ಸಮುದ್ರದ ಆಹಾರಗಳು	
7.	ಇತರೆ	

ಆ) ನೀವು ಮನೆಯಲ್ಲಿ ತಯಾರಿಸುವಂತಹ ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳು ಯಾವುವು?

ಸಂಖ್ಯೆ	ಆಹಾರ	ಎಷ್ಟು ಬಾರಿ ತಯಾರಿಸುತ್ತೀರಿ
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

ಇ) ನೀವು ಖರೀದಿಸುವ ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳಾವುವು?

ಸಂಖ್ಯೆ	ಆಹಾರ	ಎಷ್ಟು ಬಾರಿ ಖರೀದಿಸುವಿರಿ
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

ಈ) ನೀವು ತಯಾರಿಸುವ ಅನುಕೂಲಕರ ಆಹಾರಗಳ ತಯಾರಿಕೆಯಲ್ಲಿ ಯಾವುದಾದರೂ ಸುಧಾರಣೆ ಮಾಡಿದ್ದೀರಾ? ಮಾಡಿದ್ದಲ್ಲಿ ಸಾಮಗ್ರಿಗಳ ಪ್ರಕಾರ ಅಥವಾ ತಯಾರಿಸುವ ವಿಧಾನಗಳ ಪ್ರಕಾರ ವಿವರಿಸಿರಿ.

ಸಂಖ್ಯೆ	ಆಹಾರ	ಬದಲಿಸಿದ ಆಹಾರ ಸಾಮಗ್ರಿಗಳು	ತಯಾರಿಸುವ ವಿಧಾನದಲ್ಲಿ ಬದಲಾವಣೆ	ಕಾರಣಗಳು
1.				
2.				
3.				
4.				
5.				
6.				
7.				

5) ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳ ಬಗ್ಗೆ ಅಭಿಪ್ರಾಯ :

ಅ) ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳ ಬಗ್ಗೆ ಮಾಹಿತಿ ಹೇಗೆ ಪಡೆಯುತ್ತೀರಿ?

- 1.
- 2.
- 3.
- 4.
- 5.

ಆ) ನೀವು ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳನ್ನು ಖರೀದಿಸಲು ಇಷ್ಟಪಡುತ್ತೀರಾ?

ಹೌದು / ಇಲ್ಲ.

ಹೌದಾದರೆ ವಿವರಿಸಿ.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

APPENDIX II

PRA TECHNIQUE

Traditional convenience foods (TCFs) of North Karnataka

Area:

a) Information about traditional convenience foods:

- 1) Name the TCFs known to you
- 2) When are these TCFs prepared by you usually.
- 3) Why do you prepare the TCFs

Significance and seasonality of preparation					
No.	Product	Significance of the product	Season of preparation		
			Rainy	Summer	Winter
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

4) Give details of special / peculiar TCFs.

No.	Product	Ingredients/qty	Method
1.			
2.			
3.			
4.			
5.			
6.			

5) Do you know any TCF with therapeutic values? Give details:

No	Product	Suggested for	Ingredients/qty	Method
1.				
2.				
3.				
4.				
5.				
6.				

6) Which are the TCFs suitable for different age groups and physiological states?

No	Group	Male	Female
1.	Children		
2.	Elderly		
3.	All age groups		
4.	Menarche		
5.	Pregnancy		
6.	Lactation		

PRA TECHNIQUE

ಕರ್ನಾಟಕದ ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳು

५३ :

ಅ) ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳ ಬಗ್ಗೆ ಮಾಹಿತಿ :

1. ನಿಮಗೆ ಯಾವ ಯಾವ ಅನುಕೂಲಕರ ಆಹಾರಗಳು ಗೊತ್ತು?
2. ಈ ಆಹಾರಗಳನ್ನು ಯಾವಾಗ ತಯಾರಿಸುತ್ತೀರಿ?
3. ಇವುಗಳನ್ನು ಯಾಕೆ ತಯಾರಿಸುತ್ತೀರಿ.

[illegible]

4. ವಿಶೇಷವಾದ ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳ ವಿವರ.

[illegible]

5. ಸಾಂಪ್ರದಾಯಿಕ ಅನುಕೂಲಕರ ಆಹಾರಗಳಲ್ಲಿ ಚಿಕಿತ್ಸಾ ಗುಣವುಳ್ಳ ಆಹಾರಗಳಾವುವು? ವಿವರಿಸಿರಿ.

[illegible]

APPENDIX III

Documentation of traditional convenience foods available in the Dharwad market shelves

Area:

A) General information:

1. The type of income group consumers visiting the shops
2. Age of the consumers.
3. Which type of consumers visit more shop?
Elders / Men / Women / Adolescent girls / Adolescent boys / Children
4. Are the consumers : Family owned
: Married but away from home?
: Unmarried?
5. Type of traditional convenience foods (TCFs) purchased by the consumers according to seasonality.

Sl.No	Season	TCFs
1	Summer	
2	Winter	
3	Rainy	

6. Purchase of traditional convenience foods from the market of Dharwad by different age groups

Sl no	Consumers	TCFs
1	Children	
2	Adolescent boys	
3	Adolescent girls	
4	Men	
5	Women	
6	Elders	

7.

8. From where do you procure the TCFs for sale ?

Sl No	TCFs	Address of procured TCFs	Brand name	Name of the unit	
				Big	Small
1					
2					
3					
4					
5					
6					

9. Is there any modification the TCFs that you procure ? Quantity of ingredients modified ? Why ?

Sl No	TCFs	Ingredients modified	Quantity	Reason
1				
2				
3				
4				
5				
6				

ಧಾರವಾಡದ ಮಾರುಕಟ್ಟೆಯಲ್ಲಿ ದೊರಕುವ ಅನುಕೂಲಕರವಾದ ಸಾಂಪ್ರದಾಯಿಕ ಆಹಾರಗಳ ಸಮೀಕ್ಷೆ

ಅ) ಸಾಮಾನ್ಯ ಮಾಹಿತಿ :

ಪ್ರದೇಶ :

1. ನಿಮ್ಮಲ್ಲಿ ಬರುವ ಗ್ರಾಹಕರು ಯಾವ ಆರ್ಥಿಕ ಮಟ್ಟದವರು?

2. ಸಾಮಾನ್ಯ ಗ್ರಾಹಕರ ವಯಸ್ಸು.

3. ನಿಮ್ಮ ಗ್ರಾಹಕರು ಹೆಚ್ಚು ಜನ ಯಾರು?

ವೃದ್ಧರು / ಪುರುಷರು / ಮಹಿಳೆಯರು / ಯುವಕರು / ಯುವತಿಯರು / ಮಕ್ಕಳು

4. ನಿಮ್ಮ ಗ್ರಾಹಕರು : ಕುಟುಂಬವುಳ್ಳವರೋ?

: ಮದುವೆಯಾಗಿ ಮನೆಯಿಂದ ದೂರ ಇರುವವರೋ?

: ಮದುವೆಯಾಗದವರೋ?

5. ಋತುವಿಗೆ ಅನುಗುಣವಾಗಿ ಗ್ರಾಹಕರು ಖರೀದಿಸುವ ಆಹಾರಗಳು.

ಸಂಖ್ಯೆ	ಋತು	ಆಹಾರ
1.	ಬೇಸಿಗೆಕಾಲ	
2.	ಚಳಿಗಾಲ	
3.	ಮಳೆಗಾಲ	

6. ವಿವಿಧ ಗ್ರಾಹಕರು ಖರೀದಿಸುವ ಆಹಾರಗಳು.

ಸಂಖ್ಯೆ	ಗ್ರಾಹಕರು	ಆಹಾರ
1.	ಮಕ್ಕಳು	
2.	ಯುವಕರು	
3.	ಯುವತಿಯರು	
4.	ಪುರುಷರು	
5.	ಮಹಿಳೆಯರು	
6.	ವೃದ್ಧರು	

7. ನೀವು ಮಾರುವ ಸಾಂಪ್ರದಾಯಿಕ ಆಹಾರಗಳು ಎಲ್ಲಿಂದ ಪೂರೈಸಲ್ಪಡುತ್ತವೆ

ಸಂಖ್ಯೆ	ಆಹಾರ	ತಯಾರಿಸುವ ಘಟಕದ ವಿಳಾಸ	ಬ್ರಾಂಡ್ ಹೆಸರು	ಉದ್ದಿಮೆಯ ಪ್ರಮಾಣ	
				ದೊಡ್ಡ	ಸಣ್ಣ

DOCUMENTATION OF TRADITIONAL CONVENIENCE FOODS OF NORTH KARNATAKA

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2009

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ABSTRACT

Documentation of traditional convenience foods of North Karnataka was conducted across hilly, transitional, coastal and dry zones (urban and rural) during 2008-09, methods, modification, seasonality and factors influencing of traditional convenience foods preparations were collected through personnel interview and participatory rural appraisal techniques from middle income families (240). Market survey of food shops of Dharwad was carried out to document the traditional convenience foods, purchase preference among different populations. Nutrient composition of selected traditional convenience foods available in Dharwad market was undertaken using Annapurna software. The study revealed that 162 traditional convenience foods (106 ready-to-eat and 56 ready-to-use) documented across the regions more among urbanites (134) compared to rural group (81). Cereal based foods dominated (60) the category (ready-to-eat 32, ready-to-use 28). It was observed that the traditional convenience foods actually prepared (rural 81 and urban 64) were less than the documented (rural 131, urban 134). It was evident that high school attended respondents, housewives not employed generally prepared more convenience foods. Family size, type and number of generations living together negatively influenced the preparation of traditional convenience foods. There were 70 traditional convenience foods in the market. Nutrient computation revealed that Shenga laddu provided highest calories (189 Kcal) roasted groundnut highest protein and fat (6.87 g and 13.35 g) ragi laddu highest calcium (89.35 mg) and rice flakes chivda highest iron contents (10.15 mg) per serving. Modifications in terms of ingredients, methods of preparation were observed for sensory quality, convenience, economy and variety. Thus the study documented a vast range of traditional convenience foods across the different zone of North Karnataka. Some of which are available in the market. There is a scope for introducing various traditional convenience foods into the market for various reasons.