CHAPTER 1
INTRODUCTION

In ancient times man was consuming raw foods. With the search of fire he
started cooking foods. As the time passed with the evolution of modern
technology various kinds of processed foods are now available. In general,
Gujarati food pattern is almost a balanced food. Presently, nutritive values of
foods are generally derived from food tables, which are based on raw foods. It
has been established that there is a definite loss of nutritive values especially
vitamins and minerals in different operations of cooking procedures.
References show some scattered efforts for finding out nutritive value of
cooked foods. The researcher feels need for some concrete efforts for finding
out nutritive values of cooked foods consumed commonly in Saurashtra
region- a western part of Gujarat State.

1.1 History of cooking of foods
There is, as yet, no clear evidence as to when cooking was invented. Literature
shows that, cooking was invented as far back as 1.8 million to 2.3 million
years ago. Other researchers believe that cooking was invented as late as
40,000 or 10,000 years ago. Evidence of fire is inconclusive as wildfires
started by lightning-strikes are still common in East Africa and other wild
areas, and it is difficult to determine as to when fire was used for cooking, as
opposed to just being used for warmth or for keeping predators away. Most
anthropologists contend that cooking fires began in earnest barely 250,000
years ago, when ancient hearths, earth
ovens, burnt animal bones, and flint appear across Europe and the Middle
East. Back 2 million years ago, the only sign of fire is burnt earth with human
remains, which most anthropologists consider coincidence rather than
evidence of intentional fire.

1.2 Meaning of Cooking
Cooking is the process of preparing food by applying heat, selecting,
measuring and combining of ingredients in an ordered procedure for
producing safe and edible food. The process encompasses a vast range of
methods, tools and combinations of ingredients to alter the flavor, appearance,
texture, or digestibility of food. Factors affecting the final outcome include the variability of ingredients, ambient conditions, tools, and the skill of the individual doing the actual cooking. The diversity of cooking worldwide is a reflection of the aesthetic, agricultural, economic, cultural, social and religious diversity throughout the nations, races, creeds and tribes across the globe.

Applying heat to a food usually, though not always, chemically and physically transforms it, thus changing its flavor, texture, consistency, appearance, and nutritional properties. Methods of cooking that involve the boiling of liquid in a receptacle have been practiced at least since the 10th millennium BC, with the introduction of pottery.

1.3 All about Gujarat and Saurashtra

1.3.1. History of Gujarat

Gujarat is the land of Lord Krishna and Mahatma Gandhi and is situated on the Western Coast of India and has a 100 Km long Arabian sea-coastline with a total area of around 1,96,000 Sq Km. Gujarat ranks 10th in population (~42 million) and in area among the states of the Indian Union. Gujarat gets its name from "Gurjar Rashtra", the land of the Gujjars, a migrant tribe who came to India in the wake of the invading Huns in the 5th century. The history of Gujarat dates back to 2000 BC. The present state of Gujarat was formed on 1st May 1960 as a result of Bombay Reorganization act, 1960.

1.3.2. Geography of Gujarat and Saurashtra

The state is bounded by the Arabian Sea on the west, Pakistan, the neighbouring country and Rajasthan, the labour state, in the north and north-east respectively, The states Madhya Pradesh in the south east and Maharashtra in south. This region is situated on 20.4 and 72.5 east in longitude.

Saurashtra region is situated at western side of Gujarat State. This region is constituted by seven districts, namely Amreli, Bhavnagar, Junagadh, Jamnagar, Porbandar, Rajkot, and Surendranagar. Traditionally it is also called Kathiawad. Saurashtra has a long coastal area, ancient hills of Girnar, Dense forest of Gir, which is the only habitat of Asiatic Lions.
Saurashtra is an important part of Gujarat the people of this area speaks common language, represents same uniform culture. In Saurashtra total area is 64338 sq.km according to 2001 census population of Saurashtra is 13,434,348(census). The average annual rainfall of the Saurashtra region is about 775.0 mm with a standard deviation of 75.1 mm. Monsoon rainfall averages 680 mm with a variability of 61 %. Rainfall for the months of June, July, August and September averages 194, 338, 187 and 105 mm, with the corresponding coefficients of variation being 150, 69, 87 and 84%, respectively. The monsoon from June to September is received in 33 rainy days with a late season long dry spell.

Rajkot is located at 22°18′N, 70°47′E, 22.3°N, 70.78°E. It has an average elevation of 134 meters (439 feet). The city is spread in the area of 104.86 km². Rajkot has a semiarid climate, with hot, dry summers from mid-March to mid-June and the wet monsoon season from mid-June to October, when the city receives 500 mm of rain on average. The months from November to February are mild, the average temperature being around 20°C, with low humidity.

Bhavnagar is a coastal city in the eastern coast of Saurashtra, also known as Kathiawar, located at 21°28′N, 72°05′E, 21.46°N, 72.09°E. It has an average elevation of 24 meters (78 ft). It occupies area of 53.30 km². General slope dips in the northeasterly direction at the apex of Gulf of Kambhat. Bhavnagar has a semi-arid climate, with hot, dry summers from March to mid-June, the wet monsoon season from mid-June to October where the city receives around 550 mm of rain on average. The semiarid classification is due to the city's high evapotranspiration. The months from November to February are mild, the average temperature being around 20°C, with low humidity. Due to proximity to the sea, the climate remains a bit humid throughout the year.

Junagadh is located at 21°31′N, 70°28′E, 21.52°N, and 70.47° E. The Gir Forest and Mountain of Girnar are situated in Junagadh. It has an average elevation of 107 meters (351 ft). Jamnagar is located at 22°28′N 70°04′E, 22.47°N 70.07°E It has an average elevation of 20 meters (65 ft). Porbandar is located at 21°37′48″N 69°36′0″E, 21.63°N 69.6°E. It has an
average elevation of 0 meters (0 ft). Jamnagar and Porbandar have large coastal area.

1.4 General Gujarati food pattern:

Gujarat is the only vegetarian state in India even if having a large costal area. Gujarati cuisine is mostly vegetarian, reflecting the strong influence of Jains and the Vaishnavas in the region. Wheat and the two kinds of millet (jowar, bajri) are the main staples.

Geographically Gujarat can be divided into four regions North Gujarat, Kathiawad, Kutch, and South Gujarat. There are slight variations in eating habits and modes of preparation, because of the climatic and cultural differences. Certain ingredients like curd, buttermilk, groundnut, sesame seeds, lime juice, sugar etc. are very common in Gujarati food.

Table: 1

<table>
<thead>
<tr>
<th>Meal</th>
<th>Urban Saurashtra</th>
<th>Rural Saurashtra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Morning</td>
<td>Tea/Coffee/Milk</td>
<td>-----</td>
</tr>
<tr>
<td>Breakfast</td>
<td>Tea/Coffee/Milk</td>
<td>Tea/Milk</td>
</tr>
<tr>
<td></td>
<td>Bhakhari/Thepla/Gantheiya/Fafda</td>
<td>Roti/Bhakhari/Thepla/Rotla</td>
</tr>
<tr>
<td></td>
<td>Potato Poha/Biscuits, Khakhra, Khaman, Dry farsans, etc.</td>
<td></td>
</tr>
<tr>
<td>Snacks</td>
<td>Tea/Coffee/Milk</td>
<td>Tea.</td>
</tr>
<tr>
<td></td>
<td>Dry snakes, Biscuits, Bread etc.</td>
<td>Roti and left overs of lunch, Groundnuts, Daliya and dry snacks.</td>
</tr>
<tr>
<td>Mid evening</td>
<td>Fruits – some times</td>
<td>-----</td>
</tr>
<tr>
<td>Dinner</td>
<td>Bhakhri/Thepla/Paratha, Subji Khichdi, Kadhi/Milk/Buttermilk, Pickles</td>
<td>Roti/Bhakhri/Rotla Subji, Onion, Jaggery, Milk/Butter milk, Khichdi.</td>
</tr>
</tbody>
</table>

The seasonal alteration of food items are there.

Gujarati cuisine is unlike any other Indian cuisine. It is traditionally served on silver plattes to the accompaniment of rice and a variety of wheat breads.
There are very few people who do not relish Gujarati savories such as crisp spicy fried farshans, which can be bought from wayside stalls. The famous Gujarati thali served at weddings consists of farshans, and a variety of sweet and sour chutneys and pickles. This harmony derived from the mixing of the sweet with the salty is what makes the cooking of this state different from the rest of the Indian Continent.

**Figure 1**
A Gujarati Thali Generally Served at the Time of Wedding and other Joyous Celebrations.

The main dish is Roti. (Flour is made into unleavened bread called roti.) This is eaten with a variety of vegetable dishes. The villager takes a light breakfast of Roti/Rotla and milk or curds before getting out for the fields. Lunch is usually roti and buttermilk. The main meal is eaten in the evening and consists of Roti/Rotla, rice+ pulse (khichdi) and vegetables.

Meals are served on a thali, around metal tray on which Roti, rice, and small bowls are placed. The bowls may hold varieties such as vegetables, potatoes, beans, dal (lentils), and dahi (curds). Kadhi, a savory curry of curds and fried cakes made from pulses (legumes), is a popular dish. No Gujarati would eat a meal without generous helpings of ghee (clarified butter). Milk-based desserts are common. Shrikhand is a rich dessert made with curds and spiced with saffron, cardamom, nuts, and fruit. Gujarat is also known for its delicious ice cream.
1.5 Specialty of Saurastra region

It can be a marvelous to have a Kathiawadi or Saurashtra meal, where one gets a chance to indulge into a hottest spicy vegetarian tasty meal one can get anywhere. Oil, Ghee, excess salt, sugar, jaggery, green chilies, garlic and ginger abound in these dishes. Generally Saurashtra People begin with a breakfast called Gathiya/Fafda and salad of green papaya dressed up with chilly, curry leaves and mustard fried in little cooking oil, generally groundnut or cotton seed oil. Figure 1.2 shows the thaali looks when only side dishes are served before main dishes are served—Pickles (made up of various things like mango and gunda fruits, chillies, carrots and many varieties unseen elsewhere exist. Green Papaya shreds, which has all the enzymes to digest this super hot heavy food especially if one finishes off with some sweets. Top of it with a butter or ghee and Jaggery and Jeera Chaas- butter milk plenty. Onions raw and lemon wedges to add zing to the THING!!

Figure 2

This is before the main dishes are served

now the main dishes are served with Chaas- butter milk. The evening specialities are baingan ka bhartha (OLO) and garlic potatoes-lasaniya batata, sev tomato curry, with all the types of rotis to taste—rice, bajra, wheat, jowar, maize makka, and sometimes moong chaana daal or Khichdi=kadhi.
It is surprising to know that Saurashtra with its vast stretches of dry earth has sugarcane, wheat, millet, peanuts, and sesame native to this region. Hence pulses dominate Kathiawari food and sweetmeals made of gud (jaggery). This region has a delicious variety of pickles.

Kathiawari favourites include dhebras made with wheat flour mixed with spinach/Methi, green chillies, a dollop of curd and a pinch of salt and sugar, these are eaten with pickles-Chhundo (a hot and sweet shredded mango pickle) Yet another specialty of this region is Methia Masala, a dry powder made from fenugreek seeds, chilly powder and salt. This is liberally sprinkled over raw vegetables and salads and gives the food an especially piquant flavour. Phafda, and farsi puri is another Kathiawari favourite.

This makes a perfect desi gujarati thali when served with bajri (pearl millet) rotla with fresh home made butter on it and gud (Jaggery) People makes perfect warm meal every time that is good and warm for body too.
1.6 Present Study
Present study aims at deriving nutritive values of Gujarati cooked foods especially from Saurashtra region.

1.7 Title of the Study
Standardization of Guajarati cooked recipes and assessment of their nutritive values

1.8 Importance of study
This study consists of a survey work of various food preparations daily consumed by various families residing in Saurashtra. This will highlight the food pattern of this region. A standard recipe is derived for all food preparations of people of Saurashtra region based on the results of the survey, which then was prepared in laboratory and analyzed for different nutrient contents. This would be the unique kind of work as very less information is yet available about nutrient profiles of Saurashtra region food preparations. This will be beneficial to one and all: from common people to students, teachers, scientists of Foods and Nutrition, Dietitians, Health club operators, policy makers as well as doctors also.
1.9 Objectives of the Study
1 To standardize different common Guajarati recipes containing different food groups.
2 To find out the nutritive value of Guajarati cooked food.
3 To compare nutritive value of raw foods with cooked food.