A STUDY ON INDIGENOUS TRADITIONAL KNOWLEDGE REGARDING FOOD PREPARATIONS OF SRI MUKTSAR SAHIB DISTRICT OF PUNJAB

Thesis

Submitted to the Punjab Agricultural University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE
in
FOOD AND NUTRITION
(Minor Subject: Food Science and Technology)

By

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(L-2019-CS-345-M)

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LUDHIANA - 141004

2022

CERTIFICATE I

This is to certify that the thesis entitled**, "A study on indigenous traditional knowledge regarding food preparations of Sri Muktsar Sahib district of Punjab"** submitted for the degree of **Master of Science** in the subject of **Food and Nutrition** (Minor subject: **Food Science and Technology**) of the Punjab Agricultural University, Ludhiana, is a bonafide research work carried out by **Lovepreet Singh (L-2019-CS-345-M)** under my supervision and that no part of this thesis has been submitted for any other degree.

The assistance and help received during the course of investigation have been fully acknowledged.

31/1/2022

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CERTIFICATE II

This is to certify that the thesis entitled, **"A study on indigenous traditional knowledge regarding food preparations of Sri Muktsar Sahib district of Punjab"** submitted by **Lovepreet Singh (L-2019-CS-345-M)** to the Punjab Agricultural University, Ludhiana, in partial fulfilment of the requirements for the degree of **Master of Science**, in the subject of **Food and Nutrition** (Minor subject: **Food Science and Technology**) has been approved by the Student's Advisory Committee after an oral examination on the same in collaboration with an External Examiner.

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ACKNOWLEDGEMENTS

First and foremost, I bow my head to 'God' who gave me courage, patience and strength to fulfill this work and brought a change in my life.

With great pleasure, I extend my deep sense of gratitude, obligation and sincere thanks to my esteemed Major Advisor, ***Dr. (Mrs.) Jaswinder Kaur Brar****, Professor, Department of Food and Nutrition, PAU for her keen interest, unceasing encouragement, guidance, patience and ever available help, which brought the work to a successful completion. Her dynamism, vision, sincerity and motivation have deeply inspired me. It was a great privilege and honour to work and study under her guidance. I am extremely grateful for what she has offered me.*

My cordial thanks are due to ***Dr. Kiran Bains****, Head, Department of Food and Nutrition Punjab Agricultural University for her constant support, valuable suggestions and indispensable assistance provided during my research work.*

I am thankful to other members of my advisory committee ***Dr. (Mrs.) Harpreet Kaur****, Associate Professor, Department of Food and Nutrition,* ***Dr. Arashdeep Singh****, Extension Specialist (Food Technology), Department of Food Science and Technology, and* ***Dr. (Mrs.) Neerja Singla****, Senior Scientist, Department of Food and Nutrition for extending their suggestions and reviews in the work.*

I find no words, to complementary to acknowledge in so formal manner the selfless sacrifice, unending patient, encouraging, moral support, blessings and affection rendered by my parents ***S. Rajinder Singh*** *and* ***Smt. Charanjeet Kaur****, I can never repay the ever-willing and whole hearted constant support and guidance of my dear brother and sisters* ***Ramandeep Kaur, Veerdeep Kaur, Maninder Kaur, Kulwinder Singh, Khushpreet Singh and Sarbjeet Singh*** *who always kept me in high spirits and for making the atmosphere friendly and motivating always. I am grateful to my niblings* ***Anshpreet*** *and* ***Bhavnyra*** *for their love and positivity around me.*

I remain indebted to the steadfast help, replenishing support and cheerful company of my earnest friends ***Manpreet, Tejinder, Keshavdeep, Gurwinder, Kamalpreet, Arshdeep, Tanbir, Divya, Daljit, Darinderbir, Harshvardhan, Husanpreet, Amritpal*** *and* ***Anshpreet.***

I also express my thanks to the supporting office staff and lab attendants for their help during my research work.

Last but not the least, I wish to offer my thanks to all those who love and care for me. Every name may not be mentioned but none is forgotten.

Dated:

Place: Ludhiana ***(Lovepreet Singh)***

Title of the Thesis	**:**	A study on indigenous traditional knowledge regarding food preparations of Sri Muktsar Sahib district of Punjab
Name of the Student and Admission No.	**:**	Lovepreet Singh L-2019-CS-345-M
Major Subject	**:**	Food and Nutrition
Minor Subject	**:**	Food Science and Technology
Name and Designation of Major Advisor	**:**	Dr (Mrs.) Jaswinder Kaur Brar Professor
Degree to be awarded	**:**	M.Sc. (Food and Nutrition)
Year of award of degree	**:**	2022
Total pages in Thesis	**:**	69 + Annexure (i-xxix) + VITA
Name of the University	**:**	Punjab Agricultural University, Ludhiana – 141004 Punjab, India

ABSTRACT

The present investigation was carried out to identify and document the traditional indigenous knowledge of food preparations of Sri Muktsar Sahib district of Punjab. One hundred households with at least one woman above sixty years of age were selected. An interview schedule was used to collect information from the women respondents in the age category of 60 years and above on Indigenous Traditional Knowledge (ITK) regarding foods prepared for different age groups i.e. infants, preschool children, adolescents, adults, pregnant women, lactating women and elderly. Sixty-eight food preparations traditionally prepared in the selected households were identified and documented under six food groups. The findings revealed that eight food preparations were for infants while 14 preparations were specifically for pre-school children, 29 for adolescents, 41 for adults, 4 for pregnant woman, 5 for lactating woman and 30 for elderly members in the selected households. The preparation of k*anak pinni* and *bajra pinni* for preschool children was reported by 42 and 43% of the respondents, while 45 and 65% of households used to prepare these for adolescents and adults, respectively. *Desi ghee* with milk was consumed by pregnant women of selected 40% households, whereas, *panjiri* and *parshad* with *ajwain* was consumed by lactating mothers of 32 and 38% of the households, respectively. M*akki da daliya* was prepared for elderly people in 28% of the households. The primary reasons for consuming the traditional food preparations were reported to be the growth and development of children, to regain the lost strength during birth process by mother, to purify blood, to cure infections, to boost immunity and to relieve gastrointestinal problems like diarrhea, constipation etc. Thirty-one reported food preparations were consumed during all seasons, while 30 and 7 were consumed during winter and summer season, respectively. Most of the food preparations were consumed as evening snack i.e. in 51% of the households followed by mid-morning (43%), lunch time (35%), early morning and bed time (21%), dinner (12%) and as breakfast (10%). The reported indigenous food preparations were documented in the form of booklet so that these documented food preparations can be popularized as an attempt to preserve traditional wisdom regarding health foods.

Keywords: Indigenous traditional knowledge (ITK), adolescents, *chasku*, validation, documentation

31/1/2022

Signature of Major Advisor **Signature of the Student**

ਖੋਜ ਪੱਤਰ ਦਾ ਸਿਰਲੇਖ	:	ਪੰਜਾਬ ਦੇ ਸ਼੍ਰੀ ਮੁਕਤਸਰ ਸਾਹਿਬ ਜ਼ਿਲ੍ਹੇ ਦੇ ਭੋਜਨ ਤਿਆਰ ਕਰਨ ਬਾਰੇ ਦੇਸੀ ਪਰੰਪਰਾਗਤ ਗਿਆਨ ਦਾ ਅਧਿਐਨ
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ਪ੍ਰਮੁੱਖ ਵਿਸ਼ਾ	:	ਫੂਡ ਐਂਡ ਨਿਊਟ੍ਰੀਸ਼ਨ
ਸਹਿਯੋਗੀ ਵਿਸ਼ਾ	:	ਫੂਡ ਸਾਇੰਸ ਐਂਡ ਟੈਕਨੌਲੋਜੀ
ਮੁੱਖ ਸਲਾਹਕਾਰ ਦਾ ਨਾਮ ਅਤੇ ਅਹੁਦਾ	:	ਡਾ ਜਸਵਿੰਦਰ ਕੌਰ ਬਰਾੜ ਪ੍ਰੋਫੈਸਰ
ਡਿਗਰੀ	:	ਐਮ.ਐਸ.ਸੀ.
ਡਿਗਰੀ ਮਿਲਣ ਦਾ ਸਾਲ	:	2022
ਖੋਜ ਪੱਤਰ ਵਿੱਚ ਕੁੱਲ ਪੰਨੇ	:	69 + ਅੰਕਿਤਾਵਾਂ (i-xxix) + ਵੀਟਾ
ਯੂਨੀਵਰਸਿਟੀ ਦਾ ਨਾਮ	:	ਪੰਜਾਬ ਖੇਤੀਬਾੜੀ ਯੂਨੀਵਰਸਿਟੀ, ਲੁਧਿਆਣਾ-141004, ਪੰਜਾਬ, ਭਾਰਤ

ਸਾਰ ਅੰਸ਼

ਮੌਜੂਦਾ ਜਾਂਚ ਪੰਜਾਬ ਦੇ ਸ਼੍ਰੀ ਮੁਕਤਸਰ ਸਾਹਿਬ ਜ਼ਿਲ੍ਹੇ ਦੇ ਪਰੰਪਰਾਗਤ ਭੋਜਨ ਬਣਾਉਣ ਦੇ ਗਿਆਨ ਦੀ ਪਛਾਣ ਕਰਨ ਅਤੇ ਦਸਤਾਵੇਜ਼ ਬਣਾਉਣ ਲਈ ਕੀਤੀ ਗਈ ਸੀ। ਘੱਟੋ ਘੱਟ ਇੱਕ ਸੱਠ ਸਾਲ ਤੋਂ ਵੱਧ ਉਮਰ ਦੀ ਔਰਤ ਵਾਲੇ ਘਰਾਂ ਦੀ ਚੋਣ ਕੀਤੀ ਗਈ ਸੀ। ਇਸ ਵਿੱਚ ਵੱਖ-ਵੱਖ ਉਮਰ ਵਰਗਾਂ ਜਿਵੇਂ ਕਿ ਬੱਚਿਆਂ, ਪ੍ਰੀਸਕੂਲ ਬੱਚਿਆਂ, ਕਿਸ਼ੋਰਾਂ, ਬਾਲਗਾਂ, ਗਰਭਵਤੀ ਔਰਤਾਂ, ਦੁੱਧ ਚੁੰਘਾਉਣ ਵਾਲੀਆਂ ਮਾਵਾਂ ਅਤੇ ਬਜ਼ੁਰਗਾਂ ਲਈ ਬਣਾਏ ਜਾਂਦੇ ਪਰੰਪਰਾਗਤ ਭੋਜਨਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਨੂੰ 60 ਸਾਲ ਅਤੇ ਇਸ ਤੋਂ ਵੱਧ ਉਮਰ ਦੀਆਂ ਔਰਤਾਂ ਤੋਂ ਇੱਕ ਇੰਟਰਵਿਊ ਅਨੁਸੂਚੀ ਦੀ ਵਰਤੋਂ ਦੁਆਰਾ ਪ੍ਰਾਪਤ ਕੀਤਾ। ਚੁਣੇ ਗਏ ਘਰਾਂ ਵਿੱਚ ਰਿਵਾਇਤੀ ਤੌਰ ਤੇ ਤਿਆਰ ਕੀਤੇ ਜਾਂਦੇ 68 ਭੋਜਨਾਂ ਦੀ ਪਛਾਣ ਕੀਤੀ ਗਈ ਸੀ ਅਤੇ ਛੇ ਭੋਜਨ ਸਮੂਹਾਂ ਦੇ ਤਹਿਤ ਦਸਤਾਵੇਜ਼ੀ ਕੀਤੀ ਗਈ ਹੈ। ਇਸ ਖੋਜ ਤੋਂ ਪਤਾ ਲੱਗਾ ਹੈ ਕਿ ਅੱਠ ਭੋਜਨ ਬੱਚਿਆਂ ਲਈ ਬਣਾਏ ਜਾਂਦੇ ਹਨ ਜਦਕਿ 14 ਭੋਜਨ ਵਿਸ਼ੇਸ਼ ਤੌਰ ਤੇ ਪ੍ਰੀਸਕੂਲ ਬੱਚਿਆਂ ਲਈ, 29 ਕਿਸ਼ੋਰਾਂ ਲਈ, 41 ਬਾਲਗਾਂ ਲਈ, 4 ਗਰਭਵਤੀ ਔਰਤਾਂ ਲਈ, 5 ਦੁੱਧ ਚੁੰਘਾਉਣ ਵਾਲੀਆਂ ਮਾਵਾਂ ਲਈ ਅਤੇ 30 ਬਜ਼ੁਰਗਾਂ ਲਈ ਬਣਾਏ ਜਾਂਦੇ ਸਨ। ਪ੍ਰੀਸਕੂਲ ਬੱਚਿਆਂ ਲਈ 42 ਅਤੇ 43% ਉੱਤਰਦਾਵਾਂ ਦੁਆਰਾ ਕਣਕ ਦੀ ਪਿੰਨੀ ਅਤੇ ਬਾਜਰਾ ਪਿੰਨੀ ਦੀ ਤਿਆਰ ਕੀਤੀ ਜਾਂਦੀ ਸੀ, ਜਦਕਿ 45 ਅਤੇ 65% ਪਰਿਵਾਰਾਂ ਨੇ ਕਿਹਾ ਕਿ ਕਿਸ਼ੋਰਾਂ ਅਤੇ ਬਾਲਗਾਂ ਲਈ ਇਹਨਾਂ ਨੂੰ ਤਿਆਰ ਕੀਤਾ ਜਾਂਦਾ ਸੀ। ਚੁਣੇ ਹੋਏ 40% ਘਰਾਂ ਦੀਆਂ ਗਰਭਵਤਤੀ ਔਰਤਾਂ ਦੁਆਰਾ ਦੁੱਧ ਦੇ ਨਾਲ ਦੇਸੀ ਘਿਓ ਦਾ ਸੇਵਨ ਕੀਤਾ ਜਾਂਦਾ ਸੀ, ਜਦਕਿ ਪੰਜੀਰੀ ਅਤੇ ਅਜਵਾਇਨ ਵਾਲਾਂ ਪਰਸ਼ਾਦ, 32 ਅਤੇ 38% ਘਰਾਂ ਦੀਆਂ ਦੁੱਧ ਚੁੰਘਾਉਣ ਵਾਲੀਆਂ ਮਾਵਾਂ ਦੁਆਰਾ ਖਾਧਾ ਜਾਂਦਾ ਸੀ। ਮੱਕੀ ਦਾ ਦਲੀਆਂ 28% ਘਰਾਂ ਦੇ ਬਜ਼ੁਰਗ ਲੋਕਾਂ ਲਈ ਤਿਆਰ ਕੀਤਾ ਜਾਂਦਾ ਸੀ। ਰਵਾਇਤੀ ਭੋਜਨ ਬਣਾਉਣ ਦੇ ਮੁੱਖ ਕਾਰਨ ਬੱਚਿਆਂ ਦੇ ਵਾਧੇ ਅਤੇ ਵਿਕਾਸ ਲਈ ਮਾਂ ਦੁਆਰਾ ਜਨਮ ਪ੍ਰਕਿਰਿਆ ਦੇ ਦੌਰਾਨ ਗੁਆਚੀ ਸ਼ਕਤੀ ਨੂੰ ਮੁੜ ਪ੍ਰਾਪਤ ਕਰਨ, ਖੂਨ ਨੂੰ ਸ਼ੁੱਧ ਕਰਨ, ਲਾਗਾਂ ਨੂੰ ਠੀਕ ਕਰਨ, ਪ੍ਰਤੀਰੋਧਕ ਸ਼ਕਤੀ ਨੂੰ ਵਧਾਉਣ ਅਤੇ ਦਸਤ ਜਾਂ ਕਬਜ਼ ਆਦਿ ਵਰਗੀਆਂ ਬਿਮਾਰੀਆਂ ਤੋਂ ਰਾਹਤ ਲਈ ਦੱਸੇ ਗਏ ਸਨ। ਇਸ ਖੋਜ ਤੋਂ ਪਤਾ ਲੱਗਿਆ ਹੈ ਕਿ 31 ਭੋਜਨ ਸਾਰਾ ਸਾਲ ਬਣਾਏ ਅਤੇ ਖਾਧੇ ਜਾਂਦੇ ਸਨ, ਜਦਕਿ ਸਰਦੀਆਂ ਦੇ ਵਿੱਚ 30 ਅਤੇ ਗਰਮੀਆਂ ਦੇ ਮੌਸਮ ਵਿੱਚ 7 ਰਵਾਇਤੀ ਭੋਜਨ ਹੀ ਤਿਆਰ ਕੀਤੇ ਜਾਂਦੇ ਸਨ। ਜ਼ਿਆਦਾਤਰ ਭੋਜਨਾਂ ਨੂੰ ਸ਼ਾਮ ਦੇ ਸਨੈਕ ਦੇ ਤੌਰ ਤੇ ਖਾਧਾ ਜਾਂਦਾ ਸੀ ਭਾਵ 51 ਭੋਜਨ ਨਾਸ਼ਤੇ ਤੋਂ ਬਾਅਦ, 43 ਭੋਜਨਾਂ ਦੀ ਖਪਤ ਕੀਤੀ ਜਾਂਦੀ ਸੀ, ਦੁਪਹਿਰ ਦੇ ਖਾਣੇ ਦੇ ਸਮੇਂ 35 ਭੋਜਨਾਂ ਦੀ ਖਪਤ ਕੀਤੀ ਜਾਂਦੀ ਸੀ। ਸਵੇਰੇ ਅਤੇ ਸੌਣ ਦਾ ਸਮਾਂ 21 ਭੋਜਨਾਂ ਦੀ, ਰਾਤ ਦੇ ਖਾਣੇ ਸਮੇਂ 12 ਭੋਜਨਾਂ ਦੀ ਅਤੇ ਨਾਸ਼ਤੇ ਦੇ ਰੂਪ ਵਿੱਚ ਸਿਰਫ 10 ਭੋਜਨ ਹੀ ਖਾਧੇ ਜਾਂਦੇ ਸਨ। ਰਿਪੋਰਟ ਕੀਤੇ ਗਏ ਰਵਾਇਤੀ ਭੋਜਨ ਨੂੰ ਦਸਤਾਵੇਜ਼ੀ ਰੂਪ ਵਿੱਚ ਦਰਜ ਕੀਤਾ ਗਿਆ ਹੈ ਤਾਂ ਜੋ ਇਹਨਾਂ ਦਸਤਾਵੇਜੀ ਭੋਜਨ ਨੂੰ ਸਿਹਤ ਸਬੰਧੀ ਰਵਾਇਤੀ ਸਿਆਣਪ ਨੂੰ ਸੁਰੱਖਿਅਤ ਰੱਖਣ ਦੀ ਕੋਸ਼ਿਸ਼ ਵਜੋਂ ਪ੍ਰਸਿੱਧ ਕੀਤਾ ਜਾ ਸਕੇ।

ਮੁੱਖ ਸ਼ਬਦ – ਪਰੰਪਰਾਗਤ ਗਿਆਨ, ਕਿਸ਼ੋਰ, ਚਾਸਕੂ, ਪ੍ਰਮਾਣਿਕਤਾ, ਦਸਤਾਵੇਜ਼।

31/1/2022

ਮੁੱਖ ਸਲਾਹਕਾਰ ਦੇ ਹਸਤਾਖਰ

ਵਿਦਿਆਰਥੀ ਦੇ ਹਸਤਾਖਰ

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ABBREVATION

g	:	Gram
Kg	:	Kilogram
Tbsp	:	Tablespoon
Tsp	:	Teaspoon
ml	:	Milli litre
L	:	Litre
ITK	:	Indigenous traditional knowledge

CHAPTER I

INTRODUCTION

Indigenous traditional knowledge is the unique information confined to a particular culture or society. ITK is the most important ability to empower the struggle to survive, produce food, provide shelter, and achieve control of their lives. It is the possible contribution to food safety through various methods of food preservation and preparation. Indigenous traditional knowledge (ITK) may be defined as the knowledge that is exceptional to a given culture or society, which give base to agriculture, healthcare, food preparation, education, environmental conservation and other life processes on local level (Kaur 1999). It is also known as local knowledge, folk knowledge, people's knowledge, traditional wisdom or traditional science (Sirisha 2016). ITK was built up in various regions of the globe, which has their own particular information regarding plant resources and their utility for the preparation of different types of special foods.

"When a knowledgeable old person dies, a whole library disappear" (An old African proverb)

Indigenous knowledge is characteristically shared much more widely than other forms of knowledge. Therefore, it is sometimes called "popular science." However, its distribution remains segmental and socially clustered (Senanayake 2006). It is usually asymmetrically distributed within a population according to gender and age and is preserved in the memory of different individuals through the distribution. Specialists may exist with experience. Indigenous knowledge is characteristically located within broader cultural traditions; The separation of the technical from the non-technical, the rational from the non-rational, is problematic.

Indigenous traditional knowledge system consists of an integrated body of knowledge system which tends to focus on different aspects of agricultural sciences i.e. agriculture, home science, animal care & soil and water conservation (Mittal 2017). It helps in demonstrating the experiences of generations that are formed by trial-and-error experiments. It is held in various minds, languages and aptitudes, in many groups, societies, and conditions that are accessible today. Indigenous peoples have developed indigenous practices and technologies for the storage, preparation and preservation of food. This history of knowledge can give information about food preparation practices related to special foods. The knowledge acquisition methodology used by traditional peoples is based on sight, hearing and action and is linked to the diachronic nature of myths, proverbs, ancient sayings, etc., in which oral transmission transmits information from generation to generation. (Rajagopalan 2003).

ITK is the knowledge attained by the different fields of its own by the local people of each place. Food security at the household level defined as the ability of rural woman to provide special foods all the time to meet the nutrient requirements and cultural preferences of their household members. ITK related to food preparation methods is built up by the rural woman to attain food security. It helps the rural woman to build up the various nutrient and antioxidant-rich recipes, which are used for the different age groups and special groups like pregnant and lactating woman. Rural woman have enormous indigenous traditional knowledge of special food preparations and other skills important for survival. (Asogwa 2017). These special food preparations are used as a source for food security during any epidemic conditions. Ingredients used for these special food preparations are naturally and locally available in the environment.

The preparation, preservation and storage of indigenous foods play a key role in contributing to food security. Although indigenous knowledge has been recognized as a way of preserving and storing food, this knowledge is inferior to modern measures or technologies for the preservation and storage of food or the development of chemical products. Some people consider traditional practices to be primitive.

ITK of rural woman is used for years and transferred to the next generations. Mainly it is an art and spread in the community from their old generations. As woman have more roles and responsibilities to ensure household food security, especially in rural communities, woman are responsible for preparing and preserving food to increase its availability (Ibnouf 2012). Special food preparations by the use of the ITK are rich in nutrients and provide inexpensive, safe, and food security throughout the year. ITK used by woman to prepare food to maintain household food supplies are culturally acceptable, economically viable, and better suited to the local environment and conditions. ITK also provides a valuable local solution to food preparation in terms of accessibility by the rural population.

Indigenous traditional knowledge regarding different foods is also a reason for human health and nutrition. ITK on the use of herbal remedies in the treatment of diseases and the location of medicinal plants and the right time to collect useful parts of these plants. ITK provides information about methods for preparing and storing these medicines.

All members of a community have ITK: elders, woman, men, and children. The quality and quantity of ITK that an individual posses depends upon the various factors due to which it varies. Age, education, gender, social and economic status, everyday experiences, outside influences, roles and responsibilities at home and in the community, occupation, time available, intellectual skills and abilities, level of curiosity and observation, control over natural resources are some of the influencing factors. Indigenous forms of communication and

organization are vital to the decision-making process at the local level and the preservation, development and dissemination of ITKs.

ITK regarding food preparation is now a day's eroding due to change in the lifestyle of the people, change in food habits, and various environmental factors. ITK is lost during transfer from one generation to the next generation except it was formally documented and preserved. It reflects many generations of experiences and the solving of problems by thousands of indigenous people around the world is uncertain. The quick change in the lifestyle of the local communities due to modernization has basically accounted for the loss of the ITK. Younger generations underestimate the utility of ITK due to the impact of modern technology and education (Ngulube 2002). It is evident that ITK is eroding and should not be recorded or documented and remain inaccessible for the next generation, as a result, it should be completely extinct. ITK regarding food preparation also eroding day by day that may lead to a decrease in nutrient-dense food and an increase in intake of processed foods that are deficient in nutrients. It is one of the reasons for malnutrition among different age groups.

Modern food processing technology provides knowledge of nature only in the technological manner in which most essence is lost on the other hand, ethnic people gather all the knowledge from the last hundreds of centuries from their surroundings and old generations which makes the modern techniques only a secondary source. The traditional foods consumed by the different regions of the state of Punjab are closely associated with almost all aspects of their socio-cultural, spiritual and health life. The new generations in the regions have undergone a rapid change in their diet over the past twenty-five years due to the interventions of various modern methods of food preparation, materialistic life and current food. There is an urgent need to explore, analyze and document traditional knowledge related to the preparation of specialty foods consumed by rural areas of the state of Punjab and its dynamics to improve the pattern and availability of food consumption, its nutritional and medicinal value and the associated cultural and social aspects. traditional food (Singh 2007).

It is important to conserve ITK that would contribute to relearning and documentation to retain the knowledge. Documentation of their vital knowledge is necessary before the old generation passes away. Documentation of ITK regarding food preparation methods used by the rural woman has needed to protect and retain. ITK regarding food preparation helps to know the difference between the new knowledge and old knowledge including natural ingredients and benefits of nutrients present in special foods prepared. It is necessary to distinguish between current local foods, traditions of the region and historical indigenous cultural foods (McCune 2019). It is urgent nowadays to retain the traditional knowledge due to losing elders, which equates with losing knowledge. The knowledge related to indigenous

traditions is depleting day by day because of a lack of awareness about its value and impact, as well as proper documentation (Ghosh 2011). There is an urgent need for effort to document such valuable information for the welfare and betterment of society. Documentation of ITK provides a greater extent of understanding of cultural techniques related to food preparation. It helps to bring the traditional knowledge into the current culture and age. It must be gathered and documented for a particular community.

The traditional communities are intelligent and have made food sustainable through their different food preparation and preservation activities. They create a balance between the environment and requirement food habits reflects the culture of a society. Food habits of a society depend on different matters like geographical location, climate, environment religion, taste, etc. There are different food preparations and method is still applied in preparing all the preparations. Besides these preparations have social and cultural value also. Traditional preparations are rich in nutrients and have medicinal properties. These preparations are made for specific groups like infants, preschool children, adults, pregnant woman, lactating woman, and elders to maintain their health and for the growth of the body. These preparations contain all the micronutrients and macronutrients including antioxidants. These preparations are stored for a longer duration having a good shelf life. Some of these preparations are prepared according to the season such as winter and summer. These seasonal changes affect the availability of raw material and effects various other factors for preparation, also influence the shelf life of the preparations.

Environmental changes (e.g. climate change, land use change, pollutants, loss of biodiversity), globalization, industrially produced food and simplification of diets threaten the diet and health of many indigenous cultures worldwide. These effects are a major concern for indigenous peoples and are the subject of much ongoing research. Here we do not focus on the causes or consequences of the change in the use of traditional foods simply because they have not been consistently or reliably documented in the available ethnographic literature, much of which is dated. Instead, we focus on describing traditional animal foods used by indigenous peoples past and present, including their uses, biology, and nutritional value. Consequently, the study on Indigenous traditional knowledge and its management are current requirements and vitally important to understand the local knowledge and methods used by the rural people for special food preparation that is used to fulfill their day-to-day necessities (Wickramanayake2012). In addition, these studies will derive new opportunities to disclose the hidden traditional knowledge, preserve and protect it for the benefit of our new generation. Hence, the study “A study on indigenous traditional knowledge regarding food preparations of Sri Muktsar sahib district of Punjab” at least provides information and helps

to fill the gap between the existing literature on this subject in the context of Punjab. Keeping in view the importance of ITK, this study was carried out with following objectives:

- To collect ITK from rural woman regarding specific food preparations for different age groups.
- To validate the specific food preparations and evaluate their scientific value in terms of nutrition and health.
- To document validated specific food preparations in the form of a booklet.

CHAPTER II

REVIEW OF LITERATURE

One of the major human concerns in a developing country like India is food security. The main focus of health concern has changed from malnutrition to efficiencies arising due to improper number of macronutrients and micronutrients in the diet lead to several disorders. The main reason for the development of such disorders are the adoption of western foods in our local diet and eroding of traditional knowledge regarding food practices. Therefore, it is important to encourage the use of indigenous traditional knowledge of our elders for food preparation. It is also important to document precious knowledge so that our next generations also have benefited from it. The research related to the investigation entitled "A study on indigenous traditional knowledge regarding food preparations of Sri Muktsar Sahib district of Punjab" has been reviewed in this chapter. Keeping in view the objectives of the study, the reviews have been presented under the following sub-heads:

2.1 Indigenous traditional knowledge and food security

2.2 Indigenous knowledge of food preparation and preservation

2.3 Existence and conservation of indigenous traditional knowledge

2.4 Indigenous traditional knowledge and sustainable development

2.1 Indigenous traditional knowledge and food security

A study was conducted by Oniango's *et al* (2004) on the contribution of indigenous knowledge and practices in food technology to the attainment of food security in Africa and he found that indigenous knowledge was important for the cultural society. He found that indigenous knowledge and food processing improves food security in various regions of South Africa. He found that African communities also offer a vast array of indigenous knowledge and practices in food technology that are favorable to the food supply as well as to food quality and food safety and thus directly contribute to food security. Indigenous knowledge helps to improve food access, safe food availability, and utilization to meet local and regional needs. As IK is dynamic and based on innovation, adaptation, and experimentation, it presented an existent possibility for improving food and livelihood security in Africa.

Agea *et al* (2008) conducted a study on the role of indigenous knowledge in enhancing household food security in Uganda focussing on Mukungwe sub-country, Masaka district. They found and document the different indigenous practices in food crop production, food processing, indigenous practices used for storage of harvested foods, and also the extent of use of indigenous knowledge versus western knowledge. They also found that the lack of documentation of indigenous practices and technologies was also limited by their lack of proven scientific procedural explanations. They concluded that the local knowledge was also

reported to be in a precarious position because it depends on the willingness of those who have the knowledge to share it with others. They come to know that many young people view indigenous knowledge as obsolete and out of date compared with western scientific knowledge and practices.

Mapolisa (2011) conducted a study centring the peripherised systems: Zimbabwean indigenous knowledge system for food security and He concluded that indigenous people had their scientific mechanism of ensuring a reliable source of food throughout the years. He found that Zimbabwe was in the food insecurity position today because it failed to use the indigenous food insecurity strategies. He also concludes the expertise on food security, in the traditional Zimbabwean context was driven and given impetus by the way of life of the local people, responding to the needs of people and the natural environment around them. In this study, indigenous knowledge systems in finding solutions for food security with a focus on local knowledge and experiences would enable decision-makers to design and implement policies that are based on harmonized and systematized knowledge to promote food security hence developing information and knowledge.

Ibnouf (2011) conducted a study on challenges and possibilities for achieving household food security in the western Sudan region: the role of female farmers. He found the role of woman in achieving household food security in the western region of Sudan, an area much affected by the impacts of drought and civil conflicts. He conducted the study based on a quantitative survey and qualitative focus group discussions. He also includes the publicly available secondary data. He concluded that woman play a major role in producing and providing food for households and woman are responsible for food preparation, processing, and food preservation and also responsible for attending to household garden plots. He also concluded the main problems woman face as food producers and providers were lack of access to the full package of improved production methods, in addition to gender disparities and gender-biased traditions. He concluded policy needs to recognize and support the key role of woman in achieving food security and also there is a need for right based perspective to invest in woman that includes improving woman's to timely and adequate information regarding extension and marketing; increasing woman's literacy; improving their access to new agricultural technologies and productive resources, and improving their access to credit and health services.

A study on the value of woman's knowledge in food processing and preservation for achieving household food security in rural Sudan was conducted by Ibnouf (2012) and give a brief description of some indigenous foods from various rural areas of Sudan and also found that rural woman have managed to achieve sustainable food security in rural Sudan. In this study, he found that woman have more roles and responsibilities to achieve household food security. He concluded that rural woman have an important role to play in using and

preserving this valuable indigenous knowledge. In this study, a brief description of some indigenous foods from various rural areas of Sudan was also concluded. He concluded that these local-level experts manage to achieve sustainable food security at household levels, with practical, efficient, and economic solutions.

A study on Indigenous knowledge-system and food security: some examples from Malawi was conducted by Kamwendo (2014) and found the extent to which indigenous knowledge system can contribute to the achievement of food security. He found how indigenous knowledge systems can assist in food preservation and food storage, leading to food security with examples drawn from Malawi. He also concluded the traditional ways of food preservation that impact food security and access at household. He also highlights the role of woman in food preservation and food storage using the indigenous knowledge system. They also argue that the cause of food insecurity is an abandonment of the IKS.

Myeza *et al* (2015) conducted a study on food preparation practices and nutritional knowledge on household caregivers in southern KwaZulu natal and they found the nutrition knowledge and food handling practices of household caregivers in rural communities within Mandeni Municipality located in the rural part of Kwazulu Natal (KZN). They also found the socioeconomic background of the household caregivers. They revealed that woman were the main caregivers in the household. They also found the nutritional knowledge of caregivers and also concluded that the caregivers acquire nutritional knowledge from different sources, with a less contingent indigenous source of information.

Asogwa *et al* (2017) conducted a study on the promotion of Indigenous food preservation and processing knowledge and the challenge of food security in Africa and they found that indigenous methods of food preservation such as sun drying, fermentation, germination, soaking are time tested and has been used by local over generation to preserve their produce after harvest thereby surviving as a survival strategy. They also found the economic means of preserving food thus making it available during the period of scarcity. They concluded that the inclusion of indigenous knowledge of food processing and preservation into any policy or program geared towards the reduction of food insecurity will not only boost the people's confidence in themselves but also in their ability to be part of the solutions to the challenges facing them, thus increasing the chances of such programs. They also concluded that there is an urgent need to preserve and promote indigenous knowledge (IK) as a very important source.

Platnumz *et al* (2017) studied the use of indigenous knowledge systems (IKS) on food security and preservation in Tanzania and found the contribution of IKS on food security in Mbokomu ward. The main motive of the study is to ascertain the use and application of Indigenous knowledge systems on food security and also to document the methods used in food preservation. They found different methods in collecting information regarding the

application of IKS on food security such as interview method, group discussions, and observational method. They also found secondary information regarding indigenous knowledge systems on food security. They concluded that people have used different systems like hanging maize to dry on trees or hanging meat on the roof close to the kitchen to dry slowly with fire or smoke and peeled bananas dried on the sun and kept in the house roof for many years without being damaged. They concluded that there is a need to document all IKS knowledge used in preserving food. They concluded that the IKS is preserved in the elders' memory, thus, serious effort and regulation must be made to document IKS before elders with IKS knowledge passed away or died.

Kuyu and Bereka (2019) conducted a study on the contribution of indigenous food preparation and preservation techniques to attainment of food security in Ethiopia and found that indigenous methods of food preparation, preservation, and storage was well tested and have been used by local people over generation to preserve their produce after harvest, thereby serving as a survival strategy. They concluded that these indigenous foods are cheaper to use, safe, nutrient-rich, and thus boosting overall food security. They concluded that it is important to document indigenous knowledge of food storage, processing, and preservation in the country.

2.2 Indigenous knowledge of food preparations and preservation

Iwuoha and Eke (1996) conducted a study on Nigerian indigenous fermented foods: their traditional process operation, inherent problems, improvements, and current status and documented the different products used to prepared from the local staple at the household and cottage level through traditional family and ethnic methods of food processing and preparations. NIFF consists of a wide range of products sourced from cereals, legumes, tree sap, tubers, palm, and milk. They found the characteristics of the NIFF system that were assessed and view to improving on the equipment, substrates, culture as well as process control and product quality. They concluded that these efforts have yielded a reduction in the duration of fermentation and emergence of products that were free of health risks and which were of consistent quality capable of mass production through the use of mechanized equipment and sterile packages.

Jeyaram *et al* (2009) conducted a documentation study on traditional fermented foods of Manipur. They document the traditional knowledge associated with the indigenous fermented foods preparation process step by step. They visited the five sites and diversified indigenous practices were also recorded. The concluded for the ease of understanding, analysis, and discussion the acquired information were grouped into fish-based foods, bamboo shoot-based foods, soybean-based foods, and leafy vegetables-based foods and fermented beverages. They also concluded that there was a need for awareness about the basic

hygienic knowledge of production for good manufacturing practice and safety of the marketed food products as per HACCP system are the major issues to be focused on.

A study on Indigenous knowledge and practices to food preparation and preservation in Bedouin community, Egypt was conducted by Yoursey (2013) and documented the plant and animal sources of foods and different practices of preparation and preservation which suit the dry weather and scarcity of water. He concluded that the food preparation and preservation practices reflect the socio-economic, cultural, and environmental conditions prevailing in the tough desert nature that Bedouin woman live at. He provided the general description for the food system that the tribal food-related practices and patterns are highly influenced by their traditions and environment. He also concluded that these food systems of indigenous people improving and strengthening the context of nutrition and health.

Lalthanpuii (2015) conducted a study on traditional food processing techniques of the Mizo people of Northeast India and he founds the familiar indigenous technique used by Mizo people for food preparation. He found that the people utilized the available resources such as sun and fire to inventing their own way of food preservation. He concluded that many of the Mizo traditional food processing techniques, when analyzed to their deepest root, are mainly for preservation and Mizo people developed their own way of innovative scientific methods for food processing.

Aluga and Kabwe (2016) conducted a study on indigenous food processing, preservation and packaging technologies in Zambia and found the aspects of food preservation to increase the shelf life of the food. They concluded the traditional food available and food preservation methods and then tried to understand the scientific reason hidden behind these food preparation techniques.

Narzay *et al* (2016) conducted a study on indigenous fermented foods and beverages of Kokrajhar, Assam, India, and concluded the different methods of fermenting food materials for preservation, taste, and nutritional enhancement. They found that there are lesser-known fermented foods and beverages, and these are at risk of extinction due to the impact of globalization, so its documentation is a very essential part and also its further application in the food processing industry. They used the questionnaire and survey method to collect the data. They found and document a total of twelve fermented foods and three fermented beverages. They concluded that the application of the scientific methodology in the processing of such fermented foods and beverages would contribute to the sustainability of the regional economy by boosting the livelihood of the rural people.

Bora (2020) conducted a study on traditional knowledge and method of various rice preparations in Assam and he found that food habit of a society depends on different matters like geographical location, climate, environment, religion, taste, etc. He concluded that the TK and methods have still been applied in preparing various rice preparations like Jalpan, rice

flakes, rice beer, etc since ancient times. He found that these preparation methods or techniques of rice preparations have been changed with the change in times and modern technology. He concluded that the Assamese traditional food culture cannot be complete without the inclusion of Jalpan, rice cakes, and rice beer. He also founds that these Assamese traditional rice preparations may be more healthy and nutritious than commonly available patent food in the market. He concluded that the scientifically prepared and preserved Assamese rice beer may prove to be beneficial for human health or some particular diseases.

2.3 Existence and Conservation of indigenous traditional knowledge

Kaur (1999) conducted a study on scientific validation of indigenous homestead practices for use by rural homemakers and found that woman may not have known the specific contribution of the combination of food items but they knew that particular food item helped to prevent or control ailment and ensured good health of the child. She also concluded food items helped in pregnancy and during the lactation period. She also scientifically validates all the food items collected during the survey. She documented all the food items in the form of a video cassette, audio cassette, and photographs.

Goyal and Sharma (2009) conducted a study on the traditional wisdom and value addition prospects of arid foods of the desert region of northwest India and they found that arid foods are largely used by the native people as a prime source of food with their traditional wisdom. They concluded that this traditionally important arid food are more useful and convenient for processing and these can also improve the livelihood security of the people residing in the desert regions. They found that the arid foods had great nutritional, medicinal and sensory appeal. They found the considerable traditional wisdom available on various therapeutic uses of arid foods along with the great potential in the field of processing and value addition.

Bhalla (2007) conducted a study on traditional foods and beverages of Himachal Pradesh and he found that the availability of raw materials, environmental conditions clubbed with the time tested traditional knowledge and wisdom have made the people of different regions of this hill state formulate, develop and perpetuate the consumption of a wide range of traditional foods and beverages unique to its places since ages. He found that they also prepared different recipes from different fruits and vegetables and some foods are prepared from the staple food in rural areas of the state, while some are prepared on special events like marriages, local festivals, special occasions, and from the socio-cultural life of hill people. He also concluded that there is a need to be analyzed for the nutritional and nutraceutical values of these food preparations.

Kanwar *et al* (2007) conducted a study on traditional fermented foods consumed by people of Lahaul and Spiti area of Himachal Pradesh and they found that fermented traditional food products are mainly prepared from cereals and were explored

microbiologically and documented. They also found seasonal variations in the fermented food products. They concluded that the lactic acid bacteria and yeast were the predominating microorganisms in these fermented foods as evident. They concluded the important feature of these bacteria as they can produce secondary metabolites which further affect the growth of pathogenic and spoilage bacteria thereby help in extending the shelf life of these products.

Mao and Odyuo (2007) conducted a study on traditional foods of Naga tribes of northern, India and they found the various traditional foods of Naga tribes, their method of preparation, uses, and the potential for improving using modern biotechnological tools. They found that these traditional fermented foods are favorite items in the food preparations of Naga tribes, but the modern civilization has adversely affected the age-old tradition and thus younger generations are not exposed to traditional practices. They concluded that many times the products are spoiled so it is important to investigate the microbiology and biochemistry of the entire fermentation process and nutritional aspects of Naga traditional fermented food. They concluded that after understanding all the aspects it would be enabled to improve and control the quality of the products, and also overcome the problems faced in the preparation of traditional fermented foods and their safety considerations.

McCune and Kuhnlein (2011) conducted a study on assessments of indigenous people's traditional food and nutrition systems and they found that the food systems of indigenous peoples offer important information for understanding the functional aspects of the culture, environment, and health of the people using them. They concluded it is important to preserve the knowledge of these systems and the associated use of species. They also found the potential of traditional foods to prove nutrients and promote health. They concluded with close attention and documentation to what it is that people eat, how much, and "why," so communities of indigenous peoples can maximize their health with their own local and cultural food.

A study on preservation, protection, and management of traditional knowledge of indigenous and local communities in Sri Lanka was conducted by Wickramanayake (2012) and he found the rich endowment of traditional knowledge in Sri Lanka by making particular attention to sustainability. He also found that there is a vast amount of traditional knowledge and hence, there is much to learn from the traditional knowledge. He concluded the traditional knowledge system and its potential and its jeopardy owing to the lack of formal preservation and management system in the context in Sri Lanka. He found that during the early stages, a little effort was taken by Buddhist monks, local educators, indigenous medicine practitioners, etc to record some local knowledge. He concluded that there must need to preserve and to integrated TK at least into an existing KM system for the benefits of national and international communities and too long last the TK of Sri Lanka.

Alonso (2014) conducted a study on the impact of culture, religion, and traditional knowledge on food and nutrition security in developing countries and he documented how culture, religion and traditional knowledge, food preferences, intra-household food distribution patterns, child feeding practices, food processing and preparation techniques and health and sanitation practices are performed. He concluded that the knowledge embedded in traditional food systems and traditional medicine can contribute to the improvement of food and nutrition security and public health, but is currently under-researched and underutilized.

Ghosh-jerath *et al* (2015) studied traditional knowledge and nutritive value of indigenous foods in the Oraon tribal community of Jharkhand: An exploratory cross-sectional study and they found that a wide variety of indigenous foods available and consumed from the natural environment of Oraon tribes. They concluded and documented the nutrient-rich indigenous foods consumed by the tribal community and these foods could be used for quantification of nutrient intake in this community. They conducted focus group discussions with adult members to identify commonly consumed indigenous foods. Taxonomic classification and quantitative estimation of nutritive value were conducted in laboratories or utilized data from the Indian food composition database. They found more than 130 varieties of indigenous foods, many of which were rich sources of micronutrients like calcium, iron, vitamin A, and folic acid. They found that some of these indigenous foods also have medicinal properties. They concluded that the utilization and ease of assimilation of indigenous foods into routine diets can be leveraged to address malnutrition in tribal communities.

Jyoti (2015) conducted a study on the indigenous use of medicinal plants for digestive problems in Punjab, she selected 240 woman heads randomly from the socio-cultural regions i.e. Majha, Malwa, and Doaba of Punjab, and reported that majority 114 woman (47.50%) had a medium level of awareness and low level of extent of use medicinal plants.

Sharma (2015) conducted a study on indigenous use of medicinal plants for respiratory problems in Punjab and reported the percentage of woman aware of the indigenous knowledge regarding the medicinal plant and also found the awareness of the individual and how much of them positively used the knowledge. It also revealed that indigenous knowledge is used by elderly woman.

Sudhanarao and Sirisha (2016) conducted a study on indigenous knowledge and conservation of resources: A case study of Kurichchan of Ispathapalli settlement at Krishnagiri district of Tamil Nadu and they found that indigenous knowledge like any other knowledge should be constantly used and it should not be conserved only by a single person. They concluded that it is the cooperation of planners, implementers, local leaders, and the community people to conserve the traditional knowledge. They found that IK is being lost along with its valuable knowledge about ways of living sustainably. They concluded that it is

important to appreciate the role of indigenous knowledge and traditional ways of learning in maintaining the sustainability of a community. They found that the local communities autonomous bodies of knowledge that are unknown to the wider society, and that the study of their knowledge is a key to local empowerment and development. They concluded that there was a need to recognize its value and conserved, transferred, and adopted for future generations.

McCune *et al* (2019) conducted a study on why and how to document the traditional food system in a community. They found the need, reasons, and methods to document the various traditional food systems. They concluded the benefits of preserving culture for the youth and those who had moved away from the community, preserving elder's knowledge. They have concluded in the categories of "why" and "how" to document the traditional food systems. They concluded that getting traditional knowledge to younger generations and to those who have moved away has hoped to reawaken a sense of community and also help with nutrition and health by increasing access to cultural foods and medicinal plants. They concluded that food sovereignty and traditional food system projects will benefit from community collaborations that incorporate the ideas from the resulting documentation and incorporation of cultural knowledge that continues to build the health and well-being of communities.

Gartaula *et al* (2020) conducted a study on indigenous knowledge of traditional foods and food literacy among youth: Insights from rural Nepal and they found the food literacy among youth and children is configured by two domains of knowledge that is informal community bases knowledge and formal curriculum-based knowledge. They also concluded that how these two domains contribute to food security among rural youth in Nepal. They consulted with school teachers and local farmers, also construct a knowledge test which is administered to 226 high school students. They also found the various factors that have an influence on food literacy like socioeconomic factors such as gender, age level of education, migration of household members, level of student interest, and spatial factors such as the location of the school. They concluded that formal school-based education and community-based informal knowledge oppositely interact, so there is space for these two domains to synergistically interact to enhance food literacy. They also found that rural students have the potential to enhance food literacy in the schools and also provided the schools with supportive space for experiential learning that weaves community-based Indigenous knowledge of local foods.

Kumar *et al* (2020) conducted a study on traditional knowledge for dairy animals in Una district of Himachal Pradesh and they found the different ITKs based on oral communication with the people. They also documented the different traditional knowledge and their use by the people. They concluded that the documentation of these may reduce the

dependency on the current use of antimicrobials and may promote organic dairy practices in the future. They also found that traditional knowledge about dairying traditional healers know a lot about the transmission and spreading of diseases.

Eko *et al* (2020) conducted a study on eating from the wild: an insight into the indigenous wild edible plants consumed by the Digaru Mishmi tribe of Arunachal Pradesh and they explored, identified, and documented the ethnobotany of the Dgaru Mishmi people and also recorded their unique knowledge about wild edible plants. They also found that mostly the elderly people from the villages had better knowledge of wild edible plants compared with the younger generations. They found that the Mishmi tribe also faces a food shortage so to overcome the food shortage they consume and collect these wild edible plants. They concluded that these wild leafy vegetables are not the only source of food and nutrients to the local communities, but could also be a means of income to the generations if managed sustainably.

2.4 Indigenous traditional knowledge and sustainable development

A study on managing and preserving indigenous knowledge in the knowledge management era: challenges and opportunities for information professionals was conducted by Nguluble (2002) and he found that indigenous knowledge has become an important and valuable input in the management of sustainable development programs. He concluded that indigenous knowledge has a role to play in national development as well as the knowledge management and environment has led to the growth of interest in preserving and managing it. He concluded about the major challenges to the management and preservation of indigenous knowledge are issues relating to collection development, intellectual property rights, access, and the preservation of media.

Senanayake (2006) conducted a study on indigenous knowledge/CFS experiences and found that there is much to be learned from the indigenous knowledge systems of local people. He found that the generation, adaptation, and use of indigenous knowledge are greatly influenced by the culture. He concluded that indigenous knowledge accumulated by these people and constitutes a pool of techniques that are of great importance for long-term sustainability. He also concluded that indigenous knowledge also provides the basis for grassroots decision-making.

Borthakur and Singh (2012) conducted a study on Indigenous technical knowledge (ITK) and their role in sustainable grassroots innovations: an illustration in Indian context and they conducted this study within the framework of the sectoral system of innovation. They concluded that there is an instant need to document and preserve the indigenous technical knowledge of different communities. They also said that there is lack of proper alliance between indigenous knowledge and modern knowledge. They conclude that various indigenous communities are not aware about their knowledge which has been passed from

one generation to the next generation. They also documented a few examples of ITK usage in India.

Githui *et al* (2015) studied the role of indigenous knowledge in socio-economic development and concluded that in given time everything that is old will become new again. They found that indigenous knowledge is an essential element in the development process and the livelihoods of many local communities. They found that indigenous knowledge is developed and adapted continuously to gradually changing environments and passed down from generation to generation and closely interwoven with people‟s cultural values. They also found that indigenous knowledge is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives. They concluded that indigenous knowledge becomes an enhancing solution to the seemingly mega challenges of community development and advanced technology in IK usage and preservation empowers users to improve on pre-existing solutions to a problem, achieve a goal, and most of all improve on the standards of living. They found that IK is a preferred mode used at the local levels by communities as more tacit than explicit. They concluded that all communities have their own accumulation of knowledge which was easily decoded in IK and expressed easily by use of first language/mother tongue and IK provides a bottom-up approach against the convectional top-down approach. They concluded that concept of indigenous knowledge calls for the inclusion of local voices and priorities, and promises empowerment through ownership of the process by harnessing synergized skills from the objects of use.

Documentation and application of indigenous traditional knowledge (ITK) for sustainable agricultural development reviewed by Mittal and Sharma (2017) and they found that the flow of indigenous knowledge communication is necessary for preservation, development and sustainability to local wisdom. They concluded that traditional knowledge was vital for the wellbeing and for sustainable development as it evolved after thousands of year of observation and experiences. They also recommend that traditional knowledge being low in cost will also benefit national economy besides sustainable agricultural development.

CHAPTER III

MATERIALS AND METHODS

The present study was conducted to study the indigenous traditional knowledge regarding food preparations of Sri Muktsar Sahib district of Punjab. The materials and methods applied for the study has been explained with the under mentioned subheadings:

3.1 Locale of study

3.2 Research methods

3.3 Selection of sample

3.4 Development of interview schedule

3.5 Pretesting of interview schedule

3.6 Collection of data

3.7 Scientific validation

3.8 Documentation of indigenous traditional knowledge

3.1 Locale of study

The study was conducted at Sri Muktsar Sahib district of Punjab. Following were the reasons for selecting Sri Muktsar Sahib district:

1. Statistical abstract of Punjab showed that low literacy rate prevailed in rural areas of Sri Muktsar Sahib district. Since the literature on indigenous knowledge has highlighted that the reservoirs of such knowledge exist in backward areas, it was considered appropriate to conduct study in this area to generate appropriate data.
2. Since the investigator was familiar with the local language and belongs to this district, that helped to build quick rapport and enabled in depth study combined with personal observations.

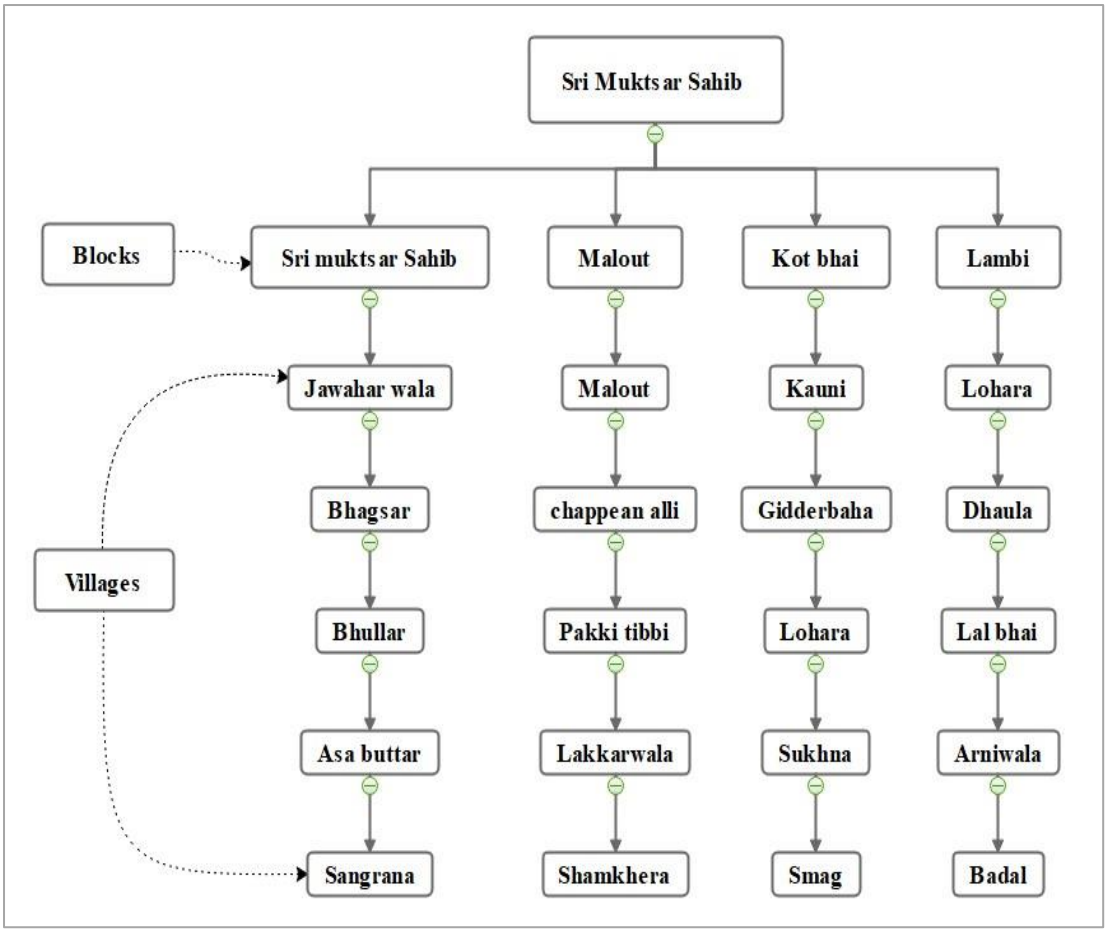
The data was collected from the different villages of four blocks of district i.e. Sri Muktsar Sahib, Malout, Lambi and Kot Bhai district. This criterion was kept in mind since the rural woman use more of the indigenous traditional knowledge regarding food preparation as compared to those who live in cities.

3.2 Research method

Survey method was adopted for the study.

3.3 Selection of respondents

One hundred rural woman of age 60 years and above were selected from four blocks i.e. Sri Muktsar Sahib, Malout, Lambi and Kot Bhai of Sri Muktsar Sahib district. Five villages from each block of district were selected and twenty-five woman from each block were selected for the collection of the data.



3.4 Development of interview schedule

A semi structured interview schedule was prepared to collect information on indigenous traditional knowledge related to different food preparations cooked by the respondents. The interview schedule was developed by keeping in view the objectives of the study and was common for all the respondents.

The schedule consists of two parts: Part 1 was related to respondent's profile. Part 2 was consisting of information regarding specific food preparations for infants, preschool children, adolescents, adults, pregnant woman, lactating woman and elderly during winter and summer season. The information sought was related to recipe name, ingredients and method of preparation of different recipes for different age groups on the basis of different food groups. The source of information and the reason of preparation of these specific food preparations for a particular group have also been noted.

3.5 Pre-testing of the interview schedule

The purpose of pre-testing of the interview schedule was to know whether the questions asked by the investigator to fill schedule were understandable to the respondents or not. Pre-testing was carried out with five rural woman above age of 60 years. Before pre-testing of the interview schedule, the aims and objectives of the study were explained to the respondents in order to get wholehearted response and correct information. Based on the

information provided and experience gained by investigator it was modified in such a way that respondents can easily explain the procedures for preparations and it was easily filled by the investigator.

3.6 Collection of data

Snowball random sampling technique was used for collection of data. The data were collected by the personal interview method from all the respondents and the responses were recorded in the schedule. Interactive interviews were conducted with information rich woman of the selected district who supplied information on indigenous knowledge regarding food preparations. These individuals were identified with the help of other local woman who were also included as subjects of total sample. Before asking questions, the investigator established rapport with the respondents. He explained them the purpose of the interview, assured them to keep their opinions confidential. During data collection, probing of further questioning was done to clarify and obtain desired information. Thus, all the possible efforts were made to create a congenial atmosphere, free from discomfort and distraction.

3.7 Scientific validation

Scientific validation of indigenous traditional knowledge regarding food preparation was carried out through reviewing the literature present. The books on nutrition (Indian food composition table 2017) allopathy and Ayurvedic medicines, research articles, dictionary and scientific bulletins were consulted to find out the scientific base of indigenous knowledge.

3.8 Documentation of indigenous traditional knowledge

Rural woman had a rich traditional knowledge of certain food preparations was accessible to the researcher during data collection. Because of the modernization and erosion of traditional knowledge, common people are not familiar with these food preparations. It was therefore necessary to properly document the data. In the present study, documentation was carried out for two main reasons: first, to use the documentary evidence of these scientifically based and stimulated preparations for wider dissemination; second, the documentation was carried out to keep the record of prevalence of food preparations for future use.

The indigenous traditional knowledge on various aspects of food preparations documented in a form of booklet with rationality and appropriateness for wider dissemination and to keep record of traditional food preparations.

CHAPTER IV

RESULTS AND DISCUSSION

The present study was aimed on Indigenous traditional knowledge regarding food preparations of Sri Muktsar Sahib district of Punjab. The data was collected from the different villages of four blocks of district i.e. Sri Muktsar Sahib, Malout, Lambi and Kot bhai. One hundred rural woman above sixty years of age supplied the information on indigenous knowledge regarding food preparations. The results of the study have been presented and discussed under following headings and subheadings: -

4.1 Profile of the respondents

4.2 Information regarding specific traditional food preparations

- 4.2.1 Cereal and millet based food preparations
- 4.2.2 Pulses and legume based food preparations
- 4.2.3 Fruit and vegetable based food preparations
- 4.2.4 Milk and milk products based food preparations
- 4.2.5 Nuts and oil seeds based food preparations
- 4.2.6 Herbs and medicinal plants based preparations

4.3 Indigenous traditional food prepared for different age groups

4.4 Consumption pattern of indigenous traditional food preparations

4.5 Scientific validation of indigenous traditional food preparations

- 4.5.1 Food preparations for infants
- 4.5.2 Food preparations for preschool children
- 4.5.3 Food preparations for adolescents
- 4.5.4 Food preparations for adults
- 4.5.5 Food preparations for pregnant woman
- 4.5.6 Food preparations for lactating woman
- 4.5.7 Food preparations for elders

4.1 Profile of the respondents

The general information and profile of the respondents are presented in the Table 4.1. The data highlighted that 55% respondents were belonging to 60-65years, 32% respondents were of 66-70years, 6% belonged to 71-75years, 5% belonged to 76-80years and only 2% respondents were belonging to 81-85years of age. Majority of the respondents i.e. 87% were belonging to 60–70 years of age.

Table 4.1 Distribution of respondents according to their age

N=100

S. No.	Age group	Number (n)	Percentage
1	60-65	55	55
2	66-70	32	32
3	71-75	6	6
4	76-80	5	5
5	81-85	2	2

The data regarding the place of respondents in the family (Table 4.2) showed that out of the hundred respondents, sixty-two were grandmothers in the family and 38 were mothers.

Table 4.2 Distribution of respondents according to their place in family

N=100

S. No.	Place in family	Number (n)	Percentage
1	Mother	38	38
2	Grandmother	62	62

4.2 Information regarding specific traditional food preparations

The indigenous traditional knowledge regarding specific food preparations for different age groups was identified. It was found that variety of ITK existed regarding specific food preparations in rural areas and majority were in conformity with scientific rationality. The number of identified specific traditional food preparations based on food groups and season are presented in Table 4.3.

4.2.1 Cereal and millet based food preparations

The data revealed that twenty cereal and millet based traditional recipes were prepared by households. *Kanak diyan bakliyan* were prepared by using whole wheat and jaggery during summer season by the 23% households. *Bajra pinni* is millet-based food preparation prepared from pearl millet, jaggery and desi ghee during winter season by the 65% households. *Gulgle* from wheat flour, fennel seeds, jaggery and mustard oil during the summer season and especially during rainy days. *Chawal pinni* was got prepared by 27% households during summer season. *Makki de bhoone dane / murmre* or popcorns was prepared in winter by 31% households. *Kanak de laddu* or *bhoot pinni* or *kanak da maroonda* was got prepared in winter from whole wheat, jaggery and desi ghee by 45% households. *Bajra moth di khichri* was prepared using the ingredients pearl millet, moth beans and desi ghee during the winter season by 10% households. *Maki da daliya* was porridge prepared from broken maize and jaggery during winter season by 37% households. *Atta pinni* was

wheat flour-based recipe prepared by 43% households during the winter season. *Khoa di pinni* was also prepared using wheat flour with the addition of *khoa* during the winter season by 42% households.

Satnaje di pinni was prepared from seven flours i.e. wheat flour, pearl millet flour, *besan*, maize flour, ragi flour, sorghum flour and barley flour with added some other ingredients i.e *saunf, ajwain,* jaggery and *desi ghee*. It was prepared during the winter season by 18% households. *Jowar da bhooga* was a snack prepared during winter season from sorghum and jaggery by the 10% households. *Jau de sattu* and *jau di ghat* were both barley-based recipes prepared during summer season by 26% and 33% households respectively. *Sevian* and *dudh walli sevian* both are prepared from wheat flour vermicelli with addition of milk in *dudh walli sevian* only during all seasons by 22% and 46% households. Basically, *sevian* was prepared for pregnant woman. *Khichri* was rice-based food preparation prepared during all seasons by 28% households. *Gur di roti* was simply a chapatti prepared from dough of wheat flour, jaggery and desi ghee for all seasons by 35% households. *Gur wale chawal* were basically sweet rice prepared by the addition of jaggery during all seasons by 27% households. *Dalia* or porridge were prepared from broken wheat, milk and sugar during all seasons by 28% households.

Table 4.3 Identification of traditional recipes prepared by the selected households

N=100

Cereal and millets based food preparations				
S. No.	**Name of recipes**	**Ingredients**	**Season**	**Number of households (n)**
1	*Kanak diyan bakliyan*	Whole wheat and jaggery	Summer	23
2	*Bajra pinni*	*Bajra* (pearl millet), jaggery and d*esi ghee*	Winter	65
3	*Gulgle*	Wheat flour, *saunf* (fennel seeds), jaggery and mustard oil	Summer	23
4	*Chawal pinni*	Rice, sugar, milk, almonds, pistachio, cashew nuts, black pepper, coconut and *desi ghee*	Summer	27
5	*Makki de bhoone dane/* Popcorn	Maize grains	Winter	31
6	*Kanak de laddu/ bhoot pinni/ maroonda*	Whole wheat, Jaggery and *desi ghee*	Summer	45

7	*Bajra moth di khichri*	Bajra, moth beans and *desi ghee* and salt	Winter	10
8	*Maki da daliya*	Broken maize and jaggery	Winter	37
9	*Atta pinni*	Wheat flour, jaggery, *desi ghee*, *gond*, *sund*, almonds, raisins and coconut	Winter	43
10	*Khoa di pinni*	Wheat flour, milk, *desi ghee*, jaggery, almonds, cashew nuts, raisins and melon seeds.	Winter	42
11	*Satnaje di pinni*	Whole wheat, whole bajra, *besan*, whole maize, whole ragi, Whole *jowar, w*hole *jau, saunf, ajwain*, jaggery and *desi ghee*	Winter	18
12	*Jowar da bhooga*	*Jowar* (sorghum) and jaggery	Winter	10
13	*Jau de sattu*	*Jau* (barley), chickpea and jaggery	Summer	12
14	*Jau di ghat*	*Jau* (barley), and chickpea	Summer	26
15	*Sevian*	*Atta sevian*, *desi ghee* and jaggery	All seasons	22
16	*Khichri*	Rice, lentil dal, *desi ghee* and salt	All seasons	28
17	*Gur di roti*	Wheat flour, jaggery, water, s*aunf*, cardamom powder and *desi ghee*	All seasons	35
18	*Gur wale chawal*	Rice, jaggery, coconut, *saunf*, and *desi ghee*	All seasons	27
19	*Dudh walli sevian*	*Atta sevian*, milk, *desi ghee*, almonds, cardamom, and sugar	All seasons	46
20	*Dalia* (Porridge)	Broken wheat, milk and sugar	All seasons	28

Pulses and legume based food preparations				
S. No.	**Name of recipes**	**Ingredients**	**Season**	**Number of households (n)**
1	*Besan Pinni*	*Besan*, jaggery and *desi ghee*	Winter	32
2	*Warian*	*Besan*, *jeera*, fenugreek leaves (dry), salt, red chili, turmeric, *garam masala*, *ajwain* and *heeng*	All seasons	19
3	*Besan laddu*	*Besan*, *desi ghee*, jaggery and k*hoa*	Winter	10
4	*Besan wala dudh*	*Besan*, milk, sugar and *desi ghee*	All seasons	7
5	*Dal diyan warian*	Moong dal, moth beans, chickpea, *mah di dal* and *heeng*	All seasons	18
6	*Warian*	*Maah di dal*, potato, spices and *heeng*	All seasons	16

Fruits and vegetable based food preparations				
S. No.	**Name of recipes**	**Ingredients**	**Season**	**Number of households (n)**
1	*Gajrela*	Carrots, sugar, k*hoa*, raisins, milk *desi ghee* and cardamom	Winter	38
2	*Shalgam palak*	Turnip, spinach, coriander, jaggery, *desi ghee*, green chili, tomato, garlic, ginger, onion, turmeric powder, red chili powder, *garam masala*, and salt	Winter	15
3	*Chulai* (Amaranth) *da saag*	*Chulai* leaves, chickpea, red chili, turmeric, *garam masala* and salt	Winter	8
4	*Hallon di bhurji*	*Hallon*, coriander leaves, potato, *desi ghee*, onion, ginger, garlic, tomato, curd, red chilli powder, *garam masala*, and salt	Winter	12

Milk and milk products based food preparations				
S. No.	**Name of recipe**	**Ingredients**	**Season**	**Number of households (n)**
1	Goat milk	Goat milk and water	All seasons	16
2	*Bauli*	Milk (Colostrum) and jaggery	All seasons	12
3	*Desi ghee* with milk	Milk and *desi ghee*	All seasons	40
4	*Khoa*	Milk, sugar and *desi ghee*	Winter	54
Nuts and oil seeds based food preparations				
S. No.	**Name of recipe**	**Ingredients**	**Season**	**Number of households (n)**
1	Dry dates (*Chuarae)*	Dry dates and milk	All seasons	48

Herbs, condiments and medicinal plant based preparations				
S. No.	**Name of recipe**	**Ingredients**	**Season**	**Number of households (n)**
1	Coconut filled with *khas khas*	Coconut, *khas khas*, milk and sugar	Winter	6
2	Decoction prepared from *ajwain* and *saunf*	*Ajwain*, *saunf* and water	All seasons	14
3	Concoction prepared from *Harad*, *supari* and *jaiphal*	*Harar*, *supari* and *jaiphal*	All seasons	13
4	*Harar* concoctions/ *Harar* powder	*Harar*	All seasons	14
5	Decoction prepared from *Saunf*, *ajwain* and *gulab*	*Saunf*, *ajwain*, *gulab* and water	All seasons	11
6	*Suhaga* with honey	*Suhaga* and honey	All seasons	11
7	Concoction prepared from h*arar* and *kath supari*	*Harar* and *kath supari*	All seasons	10
8	Pomegranate shell filled with mother milk and *nausadar*	Pomegranate shell, mother milk and *nausadar*	All seasons	13
9	Concoction prepared from almonds, *naspal*, *harar* and *elachi*	*Naspal*, almonds, *harar* and *elachi*	All seasons	12
10	*Khas khas* with jaggery	*Khas khas*, jaggery and *desi ghee*	Winter	14

11	*Sund*, *harar*, *majuphal* powder	*Sund*, *harar*, and *majuphal*	All seasons	10
12	*Chasku di pinni*	*Chasku*, wheat flour, *desi ghee* and *shakar*	Winter	39
13	*Sund* and black pepper powder	*Sund* and black pepper	All seasons	13
14	*Harar* and *amla* powder	*Harar* and *amla*	All seasons	11
15	*Neem pakora*	*Neem* leaves, wheat flour, and desi ghee	All seasons	14
16	*Methi di pinni*	*Methi*, wheat flour, milk, *desi ghee*, almonds, cashew nuts, *magaj* (melon seeds) and *pista*	Winter	12
17	*Alsi pinni*	Flax seeds, wheat flour, *shakar* and *desi ghee*	Winter	24
18	Alovera *sabji*	Alovera, turmeric, salt, red chilli black salt and *desi ghee*	All season	12
19	*Khas khas di dodhi/ kahrda*	*Khas khas*, *desi ghee* and milk	Winter	37
20	*Sund* (Dry ginger powder) *panjiri*	*Sund*, wheat flour, *besan*, jaggery, *ajwain*, and *desi ghee*	Winter	14
21	*Till di pinni*	Sesame seeds, jaggery and *desi ghee*	Winter	12
22	*Bhakra di panjiri*	*Bhakra* flour, *desi ghee*, *shakar*, *ajwain*, *khas khas*, almonds and cashew nuts	Winter	21
23	*Triphala*	*Harar*, *amla* and *bahera*	All seasons	11
24	*Thandai*	Wheat, *khas khas*, almonds, *magaj* (melon seeds) and *kalli mirch*	Summer	21
25	*Haldi panjiri*	Wheat flour, turmeric, jaggery and *desi ghee*	Winter	11
26	*Coconut pinni*	Coconut and jaggery	Winter	25
27	*Smauni*	Jaggery, *ajwain* and water	All seasons	38
28	*Sund* with jaggery and desi ghee during Lactation	*Sund* (dry ginger powder) jaggery and desi ghee	All season	32
29	*Tumme di panjiri*	*Tumme* (bitter apple), wheat flour, *shakar*, and desi ghee	Winter	15
30	*Methre di pinni*	*Methre*, wheat flour, desi	Winter	14

		ghee, *khas khas*, jaggery, cashew nuts, and almonds		
31	*Panjiri* for lactation	Wheat flour, *desi ghee*, *shakar*, *ajwain*, *sund*, raisins, *magaj*, almonds, coconut, *full makhane*, *sogi*, 4- *gond*, *elachi* powder, *kamarkas*, *saunf*, and black pepper	Winter	32
32	*Parshad*	Wheat flour, *desi ghee* and jaggery	All seasons	38
33	*Chasku*	*Chasku*, jaggery, wheat flour, *desi ghee*, coconut, *full makhane*, *sogi*, *magaj*, almonds, *saunf*, *ajwain* and *gond*	Winter	39

4.2.2 Pulses and legume based food preparations

The table represents the six pulses and legume-based recipes out of which *besan pinni* and *besan laddu* were prepared during winter season by 32% and 10% households, respectively. The only difference between the ingredient was the addition of *Khoa* in *besan laddu* as shown in Table 4.3. *Warian* and *dal diya warian* was prepared during all seasons. *Warian* was prepared from *besan*, *jeera*, dry fenugreek leaves, carom seeds, asafoetida and some spices by 19 households, on the other hand *dal diya warian* were prepared from green gram dal (moong dal)/ moth beans/ chickpea/ *mah di dal* and asafoetida by 18% household. *Besan da dudh* prepared by using *besan*, *desi ghee* and milk for all seasons by 7% households.

4.2.3 Fruit and vegetable based food preparations

Mostly fruit and vegetable based recipes were prepared during winter season (Table 4.3). *Gajrela* was made from carrots, sugar, *khoa*, almonds, milk, cardamom and *desi ghee* by 38% households. *Shalgam palak* was a vegetable prepared from turnip and spinach with added spices and condiments by 15% households. *Chulai* (Amaranth) *da saag* was also prepared as vegetable from amaranth leaves, chickpea *dal*, spices and condiments by 8% households. There were 12% households who provided information about *hallon di bhurji*, made by them.

4.2.4 Milk and milk product based food preparations

There were four milk based preparations collected from the households, three of them were prepared in all seasons i.e. goat milk, *bauli*, *desi ghee* with milk and one of them was prepared in winters i.e. *khoa*. *Bauli* was prepared by using the first milk of buffalo or cow and *desi ghee* (Table 4.3). The information was provided by 12% households. *Desi ghee* with milk

was prepared by using milk and *desi ghee* by 40% households. *Khoa* was prepared from milk, sugar and *desi ghee* by 54% households.

4.2.5 Nuts and oil seeds based food preparations

Dry dates (*Chhuara*) were boiled in milk and then served with milk during all seasons and information provided by 48% households (Table 4.3).

4.2.6 Herbal and medicinal plant based preparations

There were total 33 herbal and medicinal plant based preparations (Table 4.3). A food preparation coconut filled with *khas khas* was prepared by 6% households during winter by using coconut, *khas khas*, milk and sugar. There were different concoctions and decoctions prepared from different herbs and condiments during all the seasons i.e. decoction prepared from *ajwain and saunf* was reported by 14% households, concoction prepared from *harar, supari* and *jaiphal* by 13% households, decoction prepared from *saunf, ajwain* and *gulab* by 11% households, Concoction prepared from *harar* and *kath supari* by 10% households, Concoction prepared from almonds, *naspal, harar* and *elachi* by 12% households. *Suhaga* with honey was given in all seasons by 11% households. Pomegranate shell filled with the mother milk and *nausadar* was prepared during all seasons by 13% households. *Khas khas* with jaggery was prepared from *khas khas*, jaggery and *desi ghee* by14% households. *Sund, harar, majuphal* powder was prepared by 13% households during all seasons. *Chasku* was prepared during winters by 39% households from the ingredients *chasku, shakar,* wheat flour and *desi ghee*. All season recipe prepared were *sund* and black pepper powder and *harar* and *amla* powder by 13% and 11% households respectively. *Neem pakora* were snacks prepared from the neem leaves, wheat flour and *desi ghee* during all seasons by the 14% households. There were different *pinni's* prepared by the households i.e. *methi di pinni* by 12% households, *alsi pinni* by 24% households, *til di pinni* by 12% households, *coconut pinni* by 25% households, *chasku ate di pinni* by 39% households and *methre di pinni* by 14% households during the winter season.

Alovera sabji was prepared by the 12% households during all the seasons from alovera, condiments and spices. *Khas khas di dodhi* or *khas khas da kahrda* was prepared in winter from *khas khas*, desi ghee and milk to boost immunity by 37% households. There were five types of panjiri's recorded and prepared in winter. *Sund panjiri* was prepared by 14% households, *bhakra di panjiri* by 21% households, *haldi panjiri* by 11% households, *tumme di panjiri* by 15% households and *panjiri* for lactating mother by 32% households from the different ingredients. *Triphala was* prepared from three fruits i.e. *harar, amla* and *bahera* during all the seasons by the 11% households. *Thandai* was the drink prepared during summer season from wheat flour, *khas khas*, almonds, black pepper and *magaj* by 21% households. *Smauni* was prepared from jaggery, *ajwain* and water during all seasons by 38% households for the lactating woman. *Sund* with jaggery during lactation was prepared from dry ginger

powder, jaggery and *desi ghee* for all seasons and information provided by 32% households. *Parshad* was prepared from wheat flour, *desi ghee* and jaggery during all seasons by 38% households.

4.3 Indigenous traditional food prepared for different age groups

The indigenous traditional knowledge regarding specific foods prepared for different age groups i.e. infants, preschool children, adolescents, adults, pregnant woman, lactating woman, elders and number of information suppliers for the respective preparations is presented in Table 4.4. The data showed that *kanak diyan bakliyan* were prepared by 23% households for the preschool. The *bajra pinni* was prepared for preschool children, adolescents and adults by 26, 43 and 65% households, respectively. *Gulgle* was prepared by 23% households for preschool children and adolescents. *Chawal pinni* was prepared for preschool children, adolescents, adults and elders by 10, 24, 27 and 23% households, respectively. Thirty-one and 20% households provided information of *makki de bhoone dane* (popcorn) for preschool children and adolescents, respectively. *Kanak de laddu* or *kanak di pinni* or *bhoot pinni* was prepared for preschool children, adolescents, adults by 42, 28, and 45% households, respectively. *Bajra moth di khichri* was prepared by 7, 10 and 12% households for the adolescents, adults and elders, respectively. *Makki da dalia* was prepared by 37 and 28% households for the adulthood and elders, respectively as it is soft and easy to digest. *Atta pinni* was prepared for adults by 43% households. The *Khoa di pinni* was prepared for preschool children, adolescents and adults by 28, 42 and 28% household respectively. *Satnaje di pinni* was prepared from seven cereals and millets for adulthood by 18% information suppliers. *Jowar da bhooga* was prepared by 10% households for adolescents, adults and elders. *Jau de sattu* and *jau di ghat* was prepared by 12 and 26% households respectively for age groups adolescents, adults and elders. *Sevian* was prepared for pregnant woman by 22% households. *Khichri* and *gur di roti* were prepared for all age groups by 28 and 35% household respectively. *Dudh walian sevian* was prepared for adolescents, adults and elders by 46% households. The porridge was prepared for adolescents, adults and elders by by 28% households.

The data showed that five pulses and legumes-based food preparations were prepared for adolescents, adults and elderly i.e. *besan laddu, besan wala dudh, warian and dal diya warian.* Majority of the information suppliers reported that all these food preparations were prepared by equal number of households i.e. 10, 7, 19 and 18%, respectively. *Besan pinni* was prepared by 22, 24 and 32% households for adolescents, adults and elderly, respectively.

Out of hundred information suppliers 15% provided information about *shalgam palak* prepared for adolescents, adults and elderly. *Gajrela* was prepared for adolescents, adults, and elderly by 13, 38 and 30% households, respectively. Eight percent households prepare *chulai*

(Amaranth) *da saag* and 12% households prepare *hallon di bhurji* for adults and elders. *Methre di panjiri* prepared by 25% households for adolescents, adults and elderly.

Sixteen percent households reported that they feed goat milk to infants, 12% prepare *bauli* for preschool children, 40% gave desi ghee with milk to pregnant woman and 32% gave to lactating woman. Dry dates was also given to pregnant woman and this information was provided by 48% respondents.

Different types of concoctions and decoctions were prepared traditionally for infants decocotion of *ajwain* and *saunf* by 14% households, concoction of *harar, supari* and *jaiphal* by 13% households, *harar* by 14% households, decocotion of *Saunf, ajwain* and *gulab* by 11% households, and *harar* and *kath supar* by 10% housholds. Concoction prepared from almonds, *naspal, harar* and *elachi* was fed to preschool children by 12% households. *Harar* concoction and *harar* powder was also prepared for preschool children by 10% households, for adults by 11% and for elderly by 14% households.

Suhaga with honey was given to infants by 8 households and to preschool children by 11% households. Pomegranate filled with mother milk and *nausadar* was prepared for infants by 13% households. *Khas khas* with jaggery was prepared for preschool children and the information was provided by 14% households. *Sund, harar* and *majjuphal powder* was prepared by 10% households for preschool children. *Chasku* and *chasku ate di pinni* were prepared for adolescents, adults and elders by 39% households. Thirteen percent households provide information of *sund* and black pepper powder given to adolescents. *Harar* and *amla* powder was given to adolescents by 11% households. *Neem pakora* was a snack prepared for adolescents and adults by 14% households.

A preparation *methi di pinni* was prepared for adolescents especially for girls by 12% households. Twenty four percent households prepared *alsi pinni* for adults. *Alovera sabji* basically a vegetable that was eaten by the adults and elders, the information was provided by 12 % respondents. *Khas khas di dodhi* or *khas khas da kahrda* was prepared for adults and elderly to boost up the immunity and information was provided by 18 and 37% households, respectively. There were recipes that was prepared for adults i.e. *sund panjiri, til di pinni, bhakra di panjiri, triphala, thandai,* and *haldi panjiri,* information was provided by 14, 12, 21, 11, 21 and 11% households, respectively. Coconut *pinni* was prepared for pregnant woman by 25% respondents. *Smauni* was another traditional recipe prepared for lactating woman by 38% respondents. *Sund* with jaggery and *desi ghee* was also prepared for lactating woman by 32% households. *Panjiri* and *Parshad* also prepared for lactating woman by 32 and 38% households respectively. *Tumme di panjiri* and *methre di pinni* prepared for elderly by 15 and 14% households, respectively.

4.4 Consumption pattern of indigenous traditional food preparations

The data in Table 4.5 shows the food consumed at different time of the day, i.e. Twenty two recipes were consumed during early morning, 9 consumed during breakfast, 41 consumed during lunch, 50 consumed with evening tea and 11 were consumed during dinner.

4.5 Scientific validation of indigenous traditional food preparations

The data generated on indigenous traditional food preparations showed that a number of traditional foods were prepared and consumed by different age groups. The households well aware of the properties of locally available ingredients for good health and healthcare. The identified knowledge could be ratified with scientific base.

4.5.1 Food preparations for infants

A traditional preparation for infants was goat milk given to because easy to digest and healthier. Goat milk was boiled and diluted with water and given to the infant with the aid of cotton wick called *batti* in local language. The cotton wick was soaked in the milk and then introduced to the mouth of the infants and then woman put drops on the cotton wick with the help of spoon. Infant sucks the milk from cotton wick as they do while breast feeding.

Table 4.4 Indigenous traditional food prepared for different age groups

N=100

S. No.	Food preparations	Information Suppliers (n)						
		Infants	Preschool children	Adolescents	Adults	Pregnant woman	Lactating woman	Elderly
	Cereals and millets							
1	*Kanak diyan bakliyan*	-	23	-	-	-	-	-
2	*Bajra pinni*	-	26	43	65	-	-	-
3	*Gulgle*	-	23	23	-	-	-	-
4	*Chawal pinni*	-	10	24	27	-	-	23
5	*Makki de bhhone dane/* Popcorn	-	31	20	-	-	-	-
6	*Kanak de laddu/ pinni/ bhoot pinni /maroonda*	-	42	28	45	-	-	-
7	*Bajra moth di khichri*	-	-	7	10	-	-	12
8	*Makki da daliya*	-	-	-	37	-	-	28
9	*Atta pinni*	-	-	-	43	-	-	-
10	*Khoa di pinni*	-	-	28	42	-	-	28
11	*Satnaje di pinni*	-	-	-	18	-	-	-
12	*Jowar da bhooga*	-	-	10	10	-	-	10
13	*Jau de sattu*	-	-	12	12	-	-	12
14	*Jau di ghath*	-	-	26	26	-	-	26
15	*Sevian*	-	-	-	-	22	-	-

16	*Khichri*	-	28	28	28	-	-	28
17	*Gur di roti*	-	35	35	35	-	-	35
18	*Gur wale chawal*	-	-	27	27	-	-	27
19	*Dudh walia sevian*	-	-	46	46	-	-	46
20	*Dalia*	-	-	28	28	-	-	28
	Pulses and legumes							
21	*Besan pinni*	-	-	22	24	-	-	32
22	*Warian*	-	-	19	19	-	-	19
23	*Besan laddu*	-	-	10	10	-	-	10
24	*Besan wala dudh*	-	-	-	7	-	-	7
25	*Dal diyan warian*	-	-	18	18	-	-	18
26	*Warian*	-	-	16	16	-	-	6
	Fruit and vegetables							
27	*Gajrela*	-	-	13	38	-	-	30
28	*Shalgam palak*	-	-	15	15	-	-	15
29	*Chulai da saag*	-	-	-	8	-	-	8
30	*Hallon di bhurji*	-	-	-	12	-	-	12
31	*Methe di panjiri*	-	-	-	-	-	-	25
	Milk and milk products							
32	Goat milk	16	-	-	-	-	-	-
33	*Bauli*	-	12	-	-	-	-	-
34	Desi ghee with milk	-	-	-	-	40	32	-

	Nuts and oil seeds							
35	*Chhuara*(Dry dates) for pregnant woman	-	-	-	-	48	-	-
	Others							
36	Coconut filled with *khas khas*	-	-	-	6	-	-	-
37	Decoction prepared from *ajwain* and *saunf*	14	-	-	-	-	-	-
38	Concoction prepared from h*arar*, *supari* and *jaiphal*	13	-	-	-	-	-	-
39	*Harar* concoctions*/ Harar* powder	14	10	-	11	-	-	14
40	Decoction prepared from *Saunf, ajwain* and *gulab*	11	-	-	-	-	-	-
41	*Suhaga* with honey	8	11	-	-	-	-	-
42	Concoction prepared from *Harar* and *kath supari*	10	-	-	-	-	-	-
43	Pomegranate filled with mother milk and n*ausadar*	13	-	-	-	-	-	-
44	Concoction prepared from almonds, *naspal*, h*arar* and *elachi*	-	12	-	-	-	-	-
45	*Khas khas* with jaggery	-	14	-	-	-	-	-
46	*Sund, harar, majuphal* powder	-	10	-	-	-	-	-
47	*Chasku*	-	-	23	39	-	-	13

48	*Chasku ate di pinni*	-	-	39	39	-	-	39
49	*Sund* and black pepper powder	-	-	13	-	-	-	-
50	*Harar* and *amla* powder	-	-	11	-	-	-	-
51	*Neem pakora*	-	-	14	14	-	-	-
52	*Methi di pinni*	-	-	12	-	-	-	-
53	*Alsi pinni*	-	-	-	24	-	-	-
54	*Alovera sabji*	-	-	-	12	-	-	12
55	*Khas khas di dodhi/ kahrda*	-	-	-	18	-	-	37
56	*Sund panjiri*	-	-	-	14	-	-	-
57	*Til di pinni*	-	-	-	12	-	-	-
58	*Bhakra di panjiri*	-	-	-	21	-	-	-
59	*Triphala*	-	-	-	11	-	-	-
60	*Thandai*	-	-	-	21	-	-	-
61	*Haldi panjiri*	-	-	-	11	-	-	-
62	*Coconut pinni*	-	-	-	-	25	-	-
63	*Smauni*	-	-	-	-	-	38	-
64	*Sund* with jaggery and desi ghee during lactation	-	-	-	-	-	32	-
65	*Tumme di panjiri*	-	-	-	-	-	-	15
66	*Methre di pinni*	-	-	-	-	-	-	14
67	*Panjiri* for lactating mother	-	-	-	-	-	32	-
68	*Parshad*	-	-	-	-	-	38	-

Table 4.5 Consumption pattern of indigenous traditional food preparations

Food preparations	Early morning	Breakfast (9 AM)	2 PM	Evening (5 PM)	Dinner (7-8 PM)
Kanak diya bakliya	-	✓	✓	-	-
Bajra pinni	-	-	✓	✓	-
Gulgle	-	-	✓	✓	-
Chawal pinni	✓	-	-	✓	-
Makki de bhoone dane/ Popcorn	-	-	-	✓	-
Kanak de laddu/ bhoot pinni/ maroonda	-	-	-	✓	-
Bajra moth di khichri	-	✓	✓	-	-
Makki da daliya	-	✓	✓	-	-
Atta pinni	✓	-	✓	✓	-
Khoa di pinni	✓	-	✓	✓	-
Satnaje di pinni	-	-	✓	✓	-
Jowar da bhooga	-	-	-	✓	-
Jau da sattu	-	-	-	✓	-
Jau di ghat	-	-	-	-	-
Sevian	-	-	✓	-	✓
Khichri	-	✓	-	-	-
Gur di roti	-	✓	-	-	✓
Gur wale chawal	-	-	✓	-	-
Dudh walli sevian	-	-	✓	✓	-
Dalia	-	✓	-	-	-
Besan Pinni	✓	-	✓	✓	-
Warian	-	-	✓	-	✓

Warian	-	-	✓	-	✓
Besan laddu	✓	-	✓	✓	-
Besan wala dudh	-	-	✓	✓	-
Dal diyan warian	-	✓	-	-	✓
Gajrela	✓	-	✓	-	✓
Shalgam palak	-	-	-	-	✓
Chulai da saag	-	-	-	-	✓
Hallon di bhurji	-	-	-	-	✓
Goat milk	✓	✓	✓	-	✓
Bauli	-	✓	✓	✓	-
Desi ghee with milk	-	-	-	✓	-
Khoa	✓	-	✓	✓	-
Dry dates (*Cuharae*)	-	-	-	✓	-
Harar concoctions/ *Harar* powder	✓	-	✓	✓	-
Suhaga with honey	✓	-	✓	✓	-
Concoction prepared from *Harar* and *kath supari*	✓	-	✓	✓	-
Pomegranate shell filled with mother milk and *nausadar*	-	-	✓	✓	-
Concoction prepared from almonds, *naspal*, *harar* and *elachi*	-	-	✓	✓	-
Khas khas with jaggery	-	-	-	✓	-
Sund, harar, majuphal powder	-	-	✓	✓	-
Chasku	✓	-	✓	✓	-
Sund and black pepper powder	-	-	✓	✓	-

Harar and *amla* powder	-	-	✓	✓	-
Neem pakora	-	-	✓	✓	-
Methi di pinni	✓	-	✓	✓	-
Alsi pinni	✓	-	✓	✓	-
Alovera sabji	-	-	-	-	✓
Khas khas di dodhi/ kahrda	-	-	-	✓	-
Sund panjiri	-	-	✓	✓	-
Til di pinni	✓	-	-	✓	-
Bhakra di panjiri	-	-	✓	✓	-
Triphala	✓	-	✓	✓	-
Thandai	-	-	✓	✓	-
Haldi panjiri	-	-	-	✓	-
Coconut pinni	-	-	-	✓	-
Smauni	-	-	-	✓	-
Sund with jaggery and desi ghee during lactation	-	-	-	✓	-
Tumme di panjiri	-	-	-	✓	-
Methre di pinni	-	-	-	✓	-
Panjiri (after delivery)	✓	-	✓	✓	-
Parshad	-	-	-	✓	-
Chasku ate di pinni	✓	-	✓	✓	-
Coconut filled with *khas khas*	✓	-	-	✓	-
Decoction prepared from *ajwain* and *saunf*	✓	-	✓	✓	-
Concoction prepared from *Harad*, *supari* and *jaiphal*	✓	-	✓	✓	-
Decoction prepared from *Saunf*, *ajwain* and *gulab*	✓	-	✓	✓	-

The scientific base behind the goat milk beyond meeting daily nutrient requirements was, goat milk has unique properties, which distinguish it from cow's milk and make them a valuable alternative not just for infants, but also for adults and especially nursing mothers. Goat milk was closer to human milk and is more easily accepted especially by those young or frail (Getanah et al 2016). Goat milk does not form mucous (phlegm) and was better tolerated by asthmatics and those with allergies. The symptoms like gastrointestinal disturbances, vomiting, colic, diarrhoea, constipation and respiratory problems can be eliminated when goat milk was fed to the infants (Park 1993).

A decoction of *ajwain* and *saunf* prepared by boiling them in water. It was found to be an effective method for quick relief of stomach disorders. Scientifically *ajwain* is a truly warming seed. *Ajwain* has phytoconstituents that helps to reduce cough and it was also beneficial for nervous system and act as diuretic, analgesic (Sultana et al 2016). Fennel seeds also help to relief from cough. Fennel was used for colic in babies.

Next food preparation was *harar* used to cure diarrhoea in infants. *Harar* was rubbed on rubbed earthen lid called *chapni* in local language by adding drop of water. Scientific knowledge was that it is efficacious remedies in infantile diarrhoea. *Harar* has antidiarrhoeal activity. Its components inhibit the gastrointestinal propulsion and fluid secretion. It can be concluded that *harar* has a potential source of wide variety of phytochemical constituents and has high therapeutic value and can be utilized as a potential nutraceutical source in food industry (Soni *et al* 2015). *Harar* fruits extract mainly had seven bioactive compounds under the optimum conditions, which possesses anti-inflammatory, anticancer, diuretic, antimicrobial, antioxidant, antifungal and cytotoxic activity.

Decoction prepared from *Saunf, ajwain and gulab* petals were prepared by boiling it in water and used to cure digestive problem in infants. The scientific knowledge is that thymol present in *ajwain* has antimicrobial property and was used to manage many gastrointestinal disorders like indigestion flatulence and diarrhoea. Thymol also helps release gastric juices in the stomach thereby enhancing the process of digestion. *Saunf* (fennel seeds) boiled in water was preferred as an alternative treatment for diarrhoea and colic symptoms. It inhibits spasms in smooth muscles and has some antibacterial properties. *Gulab* (Rose petals) was good for ulcers, inflammation, acidity, enteritis and heartburn. Its astringent flavor was useful in diarrhoea from heat.

Suhaga with honey was administered to infants to cure cough. Scientifically *suhaga* is used for productive cough, breathing problems, wheezing, bronchitis, abdominal pain, dysmenorrheal and bad breathing.

Concoction prepared from *harar* and *supari* was prepared by rubbing them on earthen lid called *chapni* in local language. It was prepared to cure diarrhoea in infants. Scientifically *harar* was the efficacious remedies in infantile diarrhoea. *Supari* was considered to strengthen

the gums, sweeten the breath and improve the lining of the digestive organs. Polyphenols present in *Supari* helps to reduce the diarrhoea.

Another concoction prepared from *harar, supari* and *jaiphal* by rubbing them on earthen lid called *chapni* in local language. It was prepared to cure diarrhoea and to cure yellowish coloring of stools. *Harar* and *supari* scientific base is explained earlier and *Jaiphal* extracts shows antioxidant, antimicrobial and antidiarrhoeal properties.

Another preparation was pomegranate shell filled with mother milk and *nausadar*, which is used to cure respiratory infections. Scientific reasoning was that the *nausadar* is good for dry cough. It is able to increase salivary secretions which was helpful in retaining the moisture. This resulted in a quick healing of inflamed mucosa and correction of dryness (Rastogi 2018).

4.5.2 Food preparations for preschool children

The information on ITK of food preparations for preschool children is presented in Table 4.7. For proper growth and development of child a local preparation called *kanak diyan bakliyan* was given. This preparation was made from boiled whole wheat after cooling it down, jaggery was added. One *katori* was given to the children for one day to increase the weight of underweight infants and to increase the energy value. Scientifically it is high in calories, and provide 340Kcal of energy per 100g. It is also rich in calcium and folic acid.

Bajra pinni was made from whole bajra, jaggery and desi ghee combat the cold weather. Scientifically *Bajra pinni* was rich in calories and provides 370Kcal of energy and 10g of protein per 100g. Bajra has low glycemic index and also gluten free. It was rich in flavonoids, phenolics, omega 3 fatty acid and magnesium.

Gulgle (Indian fried doughnut) basically was a snack prepared from batter of wheat flour, jaggery, fennel and fried. It was ideally prepared during rainy days. *Gulgle* provides 560 Kcal of energy per 100g of the raw material. Another recipe was *makki de bhoone dane* used as snack and scientifically it provides 340kcal of energy per 100g. Maize was an essential source of various major phytochemicals such as carotenoids, phenolic compounds, and phytosterols. Next food preparation was *kanak de laddu* or *kanak di pinni* or *bhoot pinni* made from roasted whole wheat and jaggery and was given to increase the weight. Scientific reasoning, it is rich in calories and provide705 kcal/100g. Next Preparation was *khichri* that was made from rice and lentil dal. It was soft and easy to digest. Nutritionally *khichri* was rich in calories provide 340 kcal/100g. it was rich in folic acid, phosphorous and calcium.

Gur di roti was prepared on occasions from a dough of wheat flour and jaggery and It was rich in calories and provides 338 kcal/100g and also rich in iron and folic acid. Next preparation was *chawal di pinni* made from rice four, jaggery and desi ghee used as snack during summer season. Nutritionally it provides 543kcal of energy per 100g. It has vital function of acting as fuel for the body to carry on its vital activities. *Bauli* (Bovine colostrum)

was prepared from very first milk of buffalo or cow by the addition of jaggery. It is considered healthy. Nutritionally it was rich in proteins called antibodies.

Concoction prepared from almonds, *naspal, harar* and *elachi* by rubbing them on earthen lid called *chapni* in local language. It was given to treat diarrhoea. Scientific base behind was that the pomegranate rind is a fine astringent that will bind a loose bowel very quickly. It was a common folk remedy for dysentery with bleeding and mucus (Singh et al 2013). High content of tannins in pomegranate peel were also responsible for anti-diarrhoeal effect. *Harar* tannins treat diarrhoea. Cardamom used to cure weak digestion, bloating, flatulence, colic, intestinal pain and indigestion. It was also added to provide flavor and taste.

Khas khas was given to cure cold and it is good for brain, it was prepared in jaggery. Scientific knowledge was that it was specific against obstinate constipation, also used in cataract of the bladder. Poppy seeds has antioxidants which cures cold. The triglycerides isolated from seeds showed anti-tumour activity (Raut and ghotankar et al 2019).

Another recipe was powder prepared from *Sund, harar* and *majuphal* was given to relief from the gastrointestinal problems like diarrhoea and inflammation. Scientifically *Majuphal* were used in acute diarrhoea, and local treatment of mild inflammation of the oral cavity and pharyngeal region, as well as of genital and anal area (anandraj 2018). Many drugs of the compound preparation are heavy, difficult to digest, likely to upset the stomach and may precipitate diarrhoea; keeping all these aspects in mind, *majuphal* was included in the recipe as an astringent. *Harar* treat constipation and diarrhoea. *Sund* warms the digestive system, increases the secretion of digestive enzymes. Dry ginger clears toxins and is better for mucus aggravations.

4.5.3 Food preparations for adolescents

The information on ITK of food preparations for adolescents was presented in Table 4.8. *Bajra moth di khichri* was prepared in winters from pearl millet and *desi* ghee. It was prepared to combat the cold weather. Nutritionally it provides 400 kcal per 100g and protein. It is also rich in flavonoids, phenolics, omega 3 fatty acid and magnesium. It is the combination of cereal and pulses which is more healthy. Another preparation was *atta Khoa di pinni* made by roasting wheat flour in desi ghee and adding jaggery, nuts, melon seeds and edible gums. It was prepared in winters to provide strength to the body. Scientifically and nutritionally, it is rich in calories provide almost 398 Kcal per 100g.

Gur wale chawal was another preparation prepared by cooking rice in jaggery, nutritionally they provide calories provide 470 kcal/100g. *Dalia* or porridge was prepared from broken wheat and eaten with milk or curd. According to traditional wisdom it provides strength to the body and nutritionally it is rich in calories, fibre and micronutrients. Next food preparation was *jowar da bhooga* i.e., made from sorghum and jaggery and prepared as a snack, it was basically used as substitute for wheat.

Table 4.6 Traditional foods prepared for infants and their scientific validation

Food Groups	Food preparation	Traditional wisdom	Scientific validation	References
Milk and milk products	Goat milk (Diluted with water and served with help of cotton wick)	It is easy to digest and healthier.	It is less allergenic than cow's milk. The symptoms like gastrointestinal disturbances, vomiting, colic, diarrhoea, constipation and respiratory problems can be eliminated when goat milk is fed to the infants.	Getanah *et al* 2016 and Park 1993
Others	Decoction prepared from *Ajwain* (*Trachyspermum ammi)* and *saunf* (*Foeniculum chebula)*	It was given to the child for ptoper growth and development	Thiomole in *ajwain* helps in curing stomach disorders. Fennel seeds contains anethole which was used for colic in babies.	Sultana *et al* 2016
	Harar(Terminalia chebula) (Rub the *Harar* on earthen lid called '*Chapni'* by adding water drops)	It was used to cure diarrhoea in infants.	*Harar* is the efficacious remedies in infantile diarrhoea. *Harar* has ant-diarrhoeal activity. These components in h*arar* inhibits the gastrointestinal propulsion and fluid secretion.	Soni *et al* 2016
	Pomegranate filled with mother milk and n*ausadar* (ammonium chloride)	*Nausadar* was used to cure respiratory disorders.	*Nausadar* is used for dry cough. It is able to increase salivary secretions which was helpful in retaining the moisture. This resulted in a quick healing of inflamed mucosa and correction of dryness.	Rastogi 2018
	Suhaga (Sodium Tetraborate decahydrate) with honey	It was used to cure cough in infants.	It has properties to reduce cough, breathing problems, wheezing, bronchitis, abdominal pain, dysmenorrheal and bad breathing.	Kaur 1999

Food Groups	Food preparation	Traditional wisdom	Scientific validation	References
	Decoction prepared from *Saunf* (*Foeniculum chebula), ajwain* (*Trachyspermum ammi)* and *Gulab* (Rose petal)	It was used to cure digestive problem in infants for proper growth.	Thymol present in *Ajwain* (carom seeds) has antimicrobial property and was used to manage many gastrointestinal disorders like indigestion flatulence and diarrhoea. Thymol also helps release gastric juices in the stomach thereby enhancing the process of digestion. *Saunf* (fennel seeds) boiled in water was preferred as an alternative treatment for diarrhoea and colic symptoms. It inhibits spasms in smooth muscles and has some antibacterial properties. *Gulab* (Rose petals) was good for ulcers, inflammation, acidity, enteritis and heartburn. Its astringent fragrance was useful in diarrhoea from heat.	Kaur 1999, Ashraf *et al* 2010
	Concoction prepared from *Harar* (*Terminalia chebula)* and *Supari* (*Areca catechu)*	It was prepared to cure diarrhoea in infants.	*Harar* is the efficacious remedy in infantile diarrhoea. *Supari* improve the lining of the digestive organs. Polyphenols present in *Supari* helps to reduce the diarrhoea.	Soni *et al* 2015, Trivedy *et al* 1997
	Concoction prepared from *Harar* (*Terminalia chebula)- Supari* (*Areca catechu)- Jaiphal* (*Myristica fragrams)*	It was given to stimulate diarrhoea.	*Jaiphal* extracts shows antioxidant, antimicrobial and antidiarrhoeal properties. *Supari* stimulate the flow of appetite and aid in saliva to help in digestion.	Soni *et al* 2015, Trivedy *et al* 1997

Nutritionally it was rich in calories provide 338 kcal/100g. Sorghum was rich in protein, fibre, and vitamin. Sorghum phenols act as antioxidants.

Jau di ghat was next food preparation eaten as a snack and prepared by roasting the barley and chickpea in hot sand. It is easy to digest and keep the body cool during summer season. Nutritionally *jau di ghat* is rich in calories provide 270 kcal/100g. Barley contains soluble fiber; beta glucan binds to bile acids in the intestines and decreases plasma cholesterol levels.

Besan pinni was prepared by roasting the *besan* in desi ghee and adding jaggery. It was given to provide satiety. Nutritionally it is rich source of protein and fibre. *Besan laddu* was also prepared by roasting *besan* in desi ghee and adding jaggery and *khoa*. It was rich in calories provide 505 kcal/100g and also be a healthy snack. It is rich in folate, iron, phosphorous, zinc, calcium. Another preparations are *warian* prepared from Bengal gram flour, *jeera*, *ajwain*, black pepper, heeng, turmeric powder and salt.it can be stored for longer period having a good shelf life and adds taste to dish. Nutritionally it is rich in calories and protein. *Dal diyan warian* was prepared from green gram, moth beans, Bengal gram and nutritionally it is good source of calories and protein. Another *warian* is prepared by using potato, basically potato was added to thicken the gravy. Nutritionally it is rich source of calories and protein, and potato starch act as thickener in gravies.

Vegetable prepared from turnip and spinach is called *Shalgam palak* in local language. It is good for health and add variety for spinach to cook it in different way. Nutritionally it provides 109Kcal of energy per 100g. It is rich in vitamin A, Vitamin C, folic acid, calcium, and potassium. *Chasku* was prepared as a blood purifier and was given to treat acnes on body during adolescent. Scientifically *chasku was* bitter in taste and act as blood purifier and anti-inflammatory actions. Another preparation was *sund* and black pepper powder, basically prepared by grinding and mixing them together well. It was given for chest congestion, cough and digestion. Therapeutic potential of dry ginger is recognized in wider range that includes stomach aches, diarrhoea, nausea, asthma, respiratory disorders, toothache, gingivitis and arthritis (Iyer et al 2009). It has anti-inflammatory properties, also help to lower the blood pressure.

Harar and *amla* powder was prepared by sun drying them and grinding them into powder form, it was provided to enhance the body resistance against infections and diseases. Scientifically it was prescribed as a laxative, digestive, promoter of eyesight, intellect and longevity. It was credited with the properties, which enhance body resistance against disease and induce immunity. *Neem pakora* was another snack much more health benefits prepared from the leaves of neem. Traditionallly it was good for skin health and infections. Scientifically its bitter principle indicates its use in inflammations of the skin and digestive tract. It has anti-inflammatory, antiseptic, antibacterial, and antifungal functions.

Table 4.7 Traditional foods prepared for preschool children and their scientific validation

Food Groups	Food preparation	Traditional wisdom	Scientific validation	References
Cereals and millets	*Bajra pinni* (Made from whole *bajra*, jaggery and *desi ghee*)	It was prepared in winters to combat the cold weather.	It provides 370Kcal of energy and 10g of protein per 100g. *Bajra* has low glycemic index. It is also gluten free and rich in flavonoids, phenolics, omega 3 fatty acid and magnesium.	IFCT 2017
	Gulgle (Made from wheat flour and jaggery and fried in mustard oil)	It was prepared to give satiety.	It provides 560 Kcal of energy per 100 grams of the raw material.	IFCT 2017
	Makki de bhoone dane	It provides energy and give satiety.	It provides 340kcal of energy per 100g. Maize was an essential source of various major phytochemicals such as carotenoids, phenolic compounds, and phytosterols. It also provides fibre.	IFCT 2017
	Kanak de laddu/pinni (Made from whole wheat and jaggery)	It was given to increase the weight.	It is rich in calories provide 705 kcal/100g. It is rich in iron.	IFCT 2017
	Kanak diyan Bakliyan (Made of boiled wheat grain with added jaggery)	Given to increase the weight of underweight children.	It is rich in calories and provides 340Kcal of energy per day to the infants.	IFCT 2017
	Khichri (Made from rice, lentil dal, salt and *desi ghee)*	It was soft and easy to digest.	It is rich in energy provide 340 kcal/100g. It is rich in folic acid, phosphorous and calcium.	IFCT 2017

	Gur di roti (wheat flour and jaggery)	It was prepared as healthy sweet dish.	It is rich in energy provide 338 kcal/100g. It was also rich in iron and folic acid.	IFCT 2017
	Chawal di pinni (Made from rice flour, jaggery and *desi ghee*)	It was prepared in summer as substitute of chapatti and healthy snack.	It is rich in energy and provides 543 kcal per 100g. Rice was rich in carbohydrates provides 60g per 100g. It has vital function of acting as fuel for the body to carry on its vital activities.	IFCT 2017
Milk and milk products	*Bauli* (made from buffalo/ cow milk and jaggery)	It was fed to provide strength.	Bauli is rich in colostrum and it is important source of nutrients that promotes growth and fights disease. It is higher in protein, fat, carbohydrates, magnesium, B vitamin and vitamin A, C, and E.	IFCT 2017
Others	Concoction prepared from *Badam* (Almonds), *Naspal* (Pomegranate peel), *Harar* (*Terminalia chebula), Elachi* (*Elettaria cardamomum)*	It was given to treat diarrhoea	Pomegranate rind was a fine astringent that will bind a loose bowel very quickly. It was a common folk remedy for dysentery with bleeding and mucus. High content of tannins in pomegranate peel were also responsible for anti-diarrhoeal effect. *Harar* tannins treat diarrhoea. Cardamom used to cure weak digestion, borborygmus, bloating, flatulence, colic, intestinal pain and indigestion. It was also added to provide flavor and taste.	Soni *et al* 2016, Iyer *et al* 2009
	Khas khas (*Papaver somniferum)*	To cure cold and good for brain.	Poppy seeds contain many plants derived chemical compounds that found to have antioxidant, disease preventing and health promoting properties	Raut and ghotankar *et al* 2019

	Sund (Dry ginger powder), *Harar* (*Teminalia chebula*), *majuphal* (*Quercus infectoria)* powder	It was given to relief from the gastrointestinal problems like diarrhoea and inflammation.	*Majuphal* were used in acute diarrhoea, and local treatment of mild inflammation of the oral cavity and pharyngeal region. keeping all these aspects in mind, *majjuphal* was included in the recipe as an astringent. *Harar* treat constipation and diarrhoea. *Sund* warms the digestive system, increases the secretion of digestive enzymes. Dry ginger clears toxins and is better for mucus aggravations.	Anandraj 2018

Table 4.8 Traditional foods prepared for adolescents and their scientific validation

Food Groups	Food preparations	Traditional wisdom	Scientific validation	References
Cereals and millets	*Bajra moth di khichri* (Made from Bajra, *moth and* desi *ghee*)	Ideal to combat the cold weather.	It is rich in energy provides 400 kcal per 100g and protein. It is also rich in flavonoids, phenolics, omega 3 fatty acid and magnesium.	IFCT 2017
	Atta Khoa di pinni (Made from wheat flour, milk, *desi ghee*,jaggery, nuts, watermelon seeds and edible gums)	To provide strength to the body.	It is rich in calories provide 398 kcal/100g. It is rich source of fiber, vitamins, zinc, magnesium, iron and antioxidants.	IFCT 2017
	Gur wale chawal (Made from rice and jaggery)	Healthy sweet dish	It is source of calories provide 470 kcal/100g. They provide good amount of iron.	IFCT 2017
	Dudh walia sevian (Made from wheat vermicelli, milk and sugar)	It provides strength to body.	It is source of calories provide 242 kcal/100g. It is rich in protein and calcium.	IFCT 2017
	Dalia (Made from broken wheat)	It provides strength to the body.	It is rich in calories and fiber.	IFCT 2017
	Jowar (Sorghum) *da bhooga* (Made from jowar and jaggery)	It is used as substitute of wheat.	It is rich in calories provide 338 kcal/100g. Sorghum is rich in B-complex vitamin. Sorghum phenols act as antioxidants.	IFCT 2017
	Jau (Barley) *di ghath* (Prepared by roasting barley and chickpea in hot sand)	It is easy to digest and keep the body cool.	It is rich in calories provide 270 kcal/100g. Barley contains soluble fiber, beta glucan binds to bile acids in the intestines and thereby, decreasing plasma cholesterol levels.	IFCT 2017

Pulses and legumes	*Besan pinni* (Made from Bengal gram flour, jaggery and *desi ghee*)	It provides satiety for longer time.	It is rich source of calories provides 480kcal and protein 10g per 100g. It is rich source of potassium, zinc, copper and vitamin B6. It is high in folic acid.	IFCT 2017
	Besan laddu (Prepared from *Besan, desi ghee*, jaggery and k*hoa*)	It provides strength being healthy.	It is rich in calories provide 505 kcal per 100g. It is rich source of potassium, phosphorous, zinc, copper, folic acid and iron.	IFCT 2017
	Warian (Made from Bengal gram flour, *jeera*, fenugreek leaves,black pepper *ajwain*, *heeng*, turmeric powder and salt)	*Waris* can be stored and do not get bad easily. Add taste to dish.	It is rich in calories provide 311kcal per 100g. It is also rich in proteins.	IFCT 2017
	Dal diyan warian (Made from green gram, moth beans, Bengal gram, black gram and aesfotida)	*Waris* are prepared as substitute for vegetables.	It was rich in calories provide 242 kcal/100g. It is also rich in proteins.	IFCT 2017
	Warian (Made from *maah di dal*, potato, spices and *hing*)	*Waris* are prepared as substitute for vegetables and added potato helps to thicken the gravy.	It is rich source of carbohydrates and protein. Potato starch used as thickner.	IFCT 2017
Fruit and vegetables	*Shalgam palak* (Made from turnip, spinach, fenugreek leaves, tomato garlic, onion, jaggery *desi ghee* and spices)	It is good for health and to add variety. Spinach cooked in different way.	It provides 109Kcal of energy per 100g. It is rich in vitamin A, Vitamin C, folic acid, calcium, and potassium.	IFCT 2017

Others	*Chasku (Cassia absus Linn)* (Prepared from *chasku*, Jaggery, *desi ghee* and wheat flour)	*Chasku* is good for skin.	*Chasku* has bitter in taste and act as blood purifier, and anti-inflammatory actions.	Khare 2007
	Sund (dry ginger powder) and black pepper powder (Piper nigrum)	It was given for chest congestion cough and digestion.	Therapeutic potential of dry ginger was recognized in wider range of respiratory disorders. Black pepper reduce pain, improves breathing, and reduce inflammation.	Iyer *et al 2018*
	Harar (Terminalia chebula) and amla powder	It was given to enhance the body resistance against diseases.	It was prescribed as a laxative, digestive, promoter of eyesight, intellect and longevity. It was credited with the properties, which enhance body resistance against disease and induce immunity.	Soni *et al* 2015
	Neem pakora (made from neem leaves, wheat flour and *desi ghee*)	Neem was good for skin infections.	Its bitter principle indicates its use in inflammations of the skin and digestive tract. It has anti-inflammatory, antiseptic, antibacterial, antifungal, antacid, hypoglycemic biomedical functions.	Kaur 1999
	Methi (Trigonella foenum-graecum) di pinni (Made from *methi*,wheat flour, jaggery and *desi ghee*)	It was given to girls for their reproductive health.	*Methi* has a affinity for the uterus and female reproductive system as a whole. It has saponin containing phytoestrogen precursor which plays an important role in female health. It is taken post-partum to encourage bowel movements and clean the uterus.	IFCT 2017

Methi di pinni was prepared for the adolescent girls for their proper growth and health. It was prepared from *methi*, wheat flour, jaggery and desi ghee. Scientifically *methi* seed has affinity for the uterus and female reproductive system as a whole. It has saponin containing phytoestrogen precursor which plays an important role in female health. It was taken post-partum to encourage bowel movements and clean the uterus.

4.5.4 Food preparations for adults

The information on ITK of food preparations for adults was presented in Table 4.9. *Makki da daliya* was easy to digest prepared by adding jaggery into boiled broken maize. Nutritionally it provides 75g of carbohydrates, 350kcal energy, and 6 g of protein per 100g. maize is an essential source of various major phytochemicals such as carotenoids. Another preparation was *atta pinni* made by roasting the wheat flour in desi ghee and adding jaggery. It was good snack prepared to cure the hunger and provides felling of fullness. Nutritionally it is rich in calories provide 460 kcal/100g and good source od protein, vitamins and minerals. *Satnaje di pinni* was prepared from pear millet, whole wheat, *besan*, maize flour, ragi, sorghum and barley with added jaggery and desi ghee for roasting, because these grains are locally grown and cheap. Nutritionally these whole grains are packed with nutrients like protein, fibre, B vitamins, antioxidants and minerals. *Jau da sattu* was a snack prepared from barley, chickpea and jaggery, consumed during summer to beat the heat and healthy good health. Nutritionally it contains soluble fiber, beta glucan binds to bile acids in the intestines and decreases plasma cholesterol levels. It has also detoxifying properties protects from several health ailments.

Chulai da saag was a traditional vegetable prepared from amaranth, chickpea and spices. It boosts good health and avoid constipation. Nutritionally it provides 100 Kcal of energy per 100g and rich in folic acid and vitamin C. It also provide total dietary fiber 7g per 100g. *Hallon di bhurji* was an vegetable prepared from halon (garden cress), fenugreek leaves, potato and spices. It has various therapeutic properties and found to contain significant amount of iron, calcium and folic acid in addition to vitamin A and C. Coconut filled with *khas khas* is used to ease dry cough, cold, and help in good sleep. Scientifically it has antioxidants, disease preventing and health promoting properties. *Alsi pinni* was prepared by roasting wheat flour in desi ghee and then adding flax seeds, and *shakar*. It was given to improve digestive and overall health. Scientifically flaxseed was emerging as an important functional food ingredient because of its rich contents of α-linolenic acid (ALA), lignans, and fibre. It is potential source of high quality protein, soluble fibre, and phenolic compounds. Flaxseed also influence the absorption of nutrients. *Sund panjiri* was prepared from dry ginger powder in roasted wheat flour and jaggery. It provides strength to fight against infections or fever, basically helps to boost immunity. Scientific validation for *sund panjiri* is

that it was an supplementary food rich in calories and also increase body heat. Dry ginger powder has antibacterial properties.

Til di pinni provides strength to the body prepared roasting wheat flour and adding sesame seed and jaggery for taste. Scientifically sesame seed is source of protein and also rich in thiamine and niacin. Sesame is an important source of phytonutrients such as omega-6 fatty acids, flavonoid phenolic anti-oxidants, vitamins, and dietary fiber with potential medicinal effects. Sesame was a more helpful beneficial plant with anti-pyretic, anti-inflammatory, antioxidant, anti-microbial, anti-hypertensive, anticancer and other properties.

Alovera *sabji* was a vegetable with scientific knowledge that it is rich in Vitamin A, C and E which are antioxidants. It also contains vitamin B12, folic acid and choline. It contains eight enzymes. It provides calcium, chromium, copper, selenium, magnesium, manganese, potassium, sodium and zinc. It provides 12 anthrquinones, which are phenolic compounds traditionally known as laxatives.

Khas khas di dodhi was basically prepared of milk, poppy seeds and desi ghee. Traditional wisdom for its preparations is to cure cough and cold in winters. Scientifically Poppy seeds contain antioxidant, disease preventing and health promoting properties. Its seed extraction found useful in the pharmacy and many traditional medicines in the preparation of cough mixtures etc.

Bhakra di panjiri helps to provide strength to the body and made from *bhakra*, jaggery, desi ghee, and nuts and oil seeds. It is weed which exhibits medicinal properties. Scientifically *Bhakra* was the powerful natural antioxidant. It has antihypertensive, anti-bacterial and hypoglycemic effect which helps to maintain body. *Triphala* was prepare from three fruits i.e. *harar, amla* and *baheda.* It improves the functioning of digestive system. Scientifically *triphala* is herbal remedy with antioxidant, anti-inflammatory and antibacterial effect.

Thandai was an cold beverage prepared from whole wheat, poppy seeds, almonds, melon seeds and black pepper. Scientifically, it cures flatulence, improves digestion, and boost the immunity. It also serves as an instant energizer during summer. *Thandai* makes feel cooler, almonds loaded with healthy fats, black pepper has peperine, poppy seeds contains iron, phosphorous, fibre and linoleic acid Preparation *haldi panjiri* made up of raw turmeric , wheat flour, jaggery and desi ghee. It was given in winter to relieve and heal pain internally or to cure cold and cough. Scientifically Turmeric is an excellent antibiotic useful in fevers, sore throat and septicemia. It promote healthy intestines by reducing pathogenic bacteria. It has anti-inflammatory, antiplatelet, antioxidant, and anticarcinogenic properties. *Panjiri* is a helathy snack option with immune boosting benefits.

T**able 4.9 Traditional foods prepared for adults and their scientific validation**

Food Groups	Food prepartions	Traditional wisdom	Scientific validation	References
Cereals and millets	*Makki da daliya* (Made from boiled broken maize and jaggery)	It was prepared in winters and easy to digest.	It provides 350kcal energy, and 6 g protein per 100g. Maize is an essential source of various major phytochemicals such as carotenoids.	IFCT 2017
	Atta pinni (made from wheat flour, jaggery and *desi ghee*)	It was a good snack to cure hunger and to feel full.	It is rich source of calories provide 460 kcal/100g. It is good source of proteins, vitamin , and minerals.	IFCT 2017
	Satnaje di pinni (Made from bajra, whole wheat, *besan*, maize flour, ragi, *jowar* and *jau* with added jaggery and *desi ghee*)	These grains are cheap and locally grown.	It is rich in iron, magnesium, zinc, copper and potassium. Have good amount of vitamins. Whole grains are packed with nutrients like protein, fibre, Bvitamins, antioxidants and minerals.	IFCT 2017
	Jau (Barley) *da sattu* (Made from *Jau,* chickpea, and jeaggery)	Consuming during summer to beat heat and keeps healthy good health.	Barley contains soluble fiber, beta glucan binds to bile acids in the intestines and decreases plasma cholesterol levels. It has detoxifying properties and protects from several health ailments.	IFCT 2017
Fruit and vegetables	*Chulai (Amaranthus Spp) da saag* (made from amaranth, chickpea and spices)	It boosts the immunity and avoid constipation.	It is rich in folic acid and vitamin C. It also provides total dietary fiber 7g per 100g.	IFCT 2017

	Hallon/ garden cress *(Lepidium didymium L.) di bhurji* (made from *halon*, fenugreek leaves, potato, onion, ginger, garlic, tomato and spices)	It is anti-inflammatory and good for joint pain.	Leaves found to contain significant amount of iron, calcium and folic acid in addition to vitamin A and C. the plant is credited with antiscorbutic, digestive, expectorant and toxic properties.	IFCT 2017
Others	*Coconut* filled with *khas khas* and boiled in milk	It is used to ease dry cough, cold and help good sleep.	It has antioxidant properties, disease preventing and health promoting properties.	Astuti *et al* 2021
	Alsi (Linum usitatissimum) pinni (Made from flax seeds, s*hakar*, wheat flour, and *desi ghee*)	It is used to improve digestive and overall health	Flaxseed is an important functional food ingredient because of its rich contents of α-linolenic acid (ALA), lignans, and fiber. It is a considerable potential source of high quality protein, soluble fiber, and phenolic compounds. Flaxseed also influence the absorption of nutrients.	IFCT 2017, Amin *et al* 2014
	Sund (Dry ginger powder) panjiri (Made from *Sund*, cashew, almonds, wheat flour, *desi ghee*, *ajwain*, and jaggery)	It was given to provide strength to fight against infections or fever.	It is a supplementary food rich in calories and also increase body heat. Dry ginger powder has antibacterial properties.	Abbasi *et al* 2019
	Til (Sesamum indicum) di pinni (Prepared from sesame seeds, jaggery,and *desi ghee*)	These were used for whole body strength.	*Til* (sesame seeds) is an important source of protein, calcium and zinc. Sesame is an important source of phytonutrients such as omega-6 fatty acids, flavonoid phenolic anti-oxidants, vitamins, and dietary fiber with	IFCT 2017

			potential medicinal effects. Sesame is a more helpful beneficial plant with anti-pyretic, anti-inflammatory, antioxidant, anti-microbial, anti-hypertensive, anticancer and other properties.	
	Alovera *sabji* (Made from alovera, turmeric powder, salt black pepper, and *desi ghee*)	It was good for overall health.	Alovera is rich in Vitamin A, C and E which are antioxidants. It also contain vitamin B12, folic acid and choline. It contains eight enzymes. It provides calcium, chromium, copper, selenium, magnesium, manganese, potassium, sodium and zinc. It provides 12 anthrquinones, which are phenolic compounds traditionally known as laxatives.	Surjushe 2008
	Khas khas (Papaver somniferum) di dodhi (Prepared from Milk, poppy seeds and *desi ghee*)	It was prepared to cure cough and cold in winters.	Poppy seeds contain antioxidants, disease preventing and health promoting properties. Its seed extraction found useful in the pharmacy and many traditional medicines in the preparation of cough mixtures, expectorants etc.	Khare 2007
	Bhakra (Tribulus terrestris) di panjeri (Made from *Bhakhra*, jaggery, *desi ghee*, *ajwain*, poppy seeds, almonds and cashew nuts.)	It is a weed which exhibit medicine properties.	*Bhakra* is the powerful natural antioxidant. It has antihypertensive, anti-bacterial and hypoglycemic effect.	Ahmed *et al* 2020

	Triphala (prepared from *Harar, Amla and baheda)*	It was given to improve functioning of digestive system.	*Triphala* is herbal remedy with antioxidants, anti-inflammatory and antibacterial effects.	Soni *et al* 2015
	Thandai (Made from poppy seeds, whole wheat, almonds, watermelon seeds and black pepper)	It is a healthy summer drink.	It cures flatulence, improves digestion, and boost the immunity. It serves as an instant energizer during summer. *Thandai* makes feel cooler, almonds loaded with healthy fats, black pepper has piperine. Poppy seeds contain iron, phosphorous and fiber and linoleic acid.	Khare 2007
	Kachi haldi panjiri (Made from raw turmeric powder, wheat flour, powdered jaggery and *desi ghee*)	It was given in winters to relieved and heal pain internally to cure cold and cough.	Turmeric is an excellent antibiotic useful in fevers, sore throat and septicemia. Promotes healthy intestines by reducing pathogenic bacteria and has anti-inflammatory, antiplatelet, antioxidant, and anticarcinogenic properties. *Panjiri* is a healthy snack option with immune boosting benefits.	Iyer *et al* 2009

Table 4.10 Traditional foods prepared for pregnant woman and their scientific validation

Food Groups	Food preparations	Traditional wisdom	Scientific validation	References
Cereals and millets	*Sevian* (made from wheat vermicelli, *desi ghee*, jaggery)	It was given during pregnancy to cure constipation.	The preparation act as bulk laxative and keeps the digestive system clean.	Kaur 1999
Milk and milk products	*Desi ghee* with milk	It was given for normal and easy delivery.	The preparation act as laxative and keeps the digestive system clean. There is no scientific proof that ghee aids during labour.	Kaur 1999
Nuts and oil seeds	*Chhuara* (Dry Dates)	It was given to provide health benefits for both pregnant woman and fetus.	Edible dates are good diuretic which increase urination and decrease edema. It maintain bone health, relieve constipation, improve digestion and energy booster.	Kaur 1999
Others	Coconut *pinni* (Made from dry coconut and powdered jaggery)	It was given during 9^{th} month to pregnant woman due to its warming effect and it helps in reduction of pain.	Coconut contains healthy fats, which are needed during pregnancy. Coconut also contains lauric acid which helps in milk production and is super helpful during lactation. It prevents the feeling of fatigue, provides energy, increases immunity, improves circulation, and prevents dehydration. It has laxative, diuretic properties	Astuti *et al* 2021

4.5.5 Food preparations for pregnant woman

Indigenous traditional knowledge regarding food preparation for pregnant woman is presented in Table 4.10. There were four specific food preparations are collected for pregnant woman i.e. *Sevian*, Desi ghee with milk, Dry dates and coconut *pinni*. First *sevian* was prepared from wheat vermicelli, desi ghee and jaggery and given during pregnancy to cure constipation. The scientific reason behind giving *sevian* was that it acts bulk laxative and keeps the digestive system clean.

Second preparation is Desi ghee with milk was prepared and given in 9^{th} month for normal and easy delivery. Scientifically, it acts as bulk laxative and keeps the digestive system clean. There is nor scientific proof that ghee aids during labor.

Third was dry dates called *chhuara* local language. It is given to provide health benefits for pregnant woman and foetus. Scientifically dry dates are good diuretic which increase urination and decrease edema. It also maintains bone health, relieve constipation, improves digestion and energy booster.

Fourth preparation was coconut pinni made from coconut and powdered jaggery and given during 9^{th} month of pregnancy due to its warming effect and it help to reduce pain. The scientific reason is that coconut contains healthy fats, which were needed during pregnancy. Coconut also contains lauric acid which helps in milk production and is super helpful during lactation. It prevents the feeling of fatigue, provides energy, increases immunity, improves circulation, and prevents dehydration. It has laxative, diuretic properties

4.5.6 Food preparations for lactating woman

Indigenous traditional knowledge regarding food preparation for lactating woman is presented in Table 4.11. *Smauni* was prepared by cooking jaggery in desi ghee and sprinkling carom seeds. It given to cure constipation. Scientically desi ghee and jaggery prevents constipation after delivery and gives energy. Thiomole in ajwain acts as analgesic. Preparation *Sund* with jaggery and desi ghee which helps clearing the blood clots from uterus. Scientific validation revealed that it is a galactagogues prepared and consumed during lactation phase to provide sufficient milk secretion to nourish the baby. Dry ginger also helps to heal the body.

Panjiri was the most popular preparation in rural region. *Panjiri* was prepared by cooking wheat flour in desi and adding nuts and oil seeds. It given to mother to provide strength to the body of mother lost during birth process. Scientifically it is rich carbohydrates and fats, and micronutrients helps to restore energy that the mother lost during the birth process. It is nutritious product which also helps to improve milk production.

Parshad was also prepared for lactating mother with the addition of *ajwain*. It was given for few days after delivery of baby to provide strength to the body. Scientifically preparation act as bulk laxative and Thiomole in *ajwain* acts as analgesic.

Table 4.11 Traditional foods prepared for lactating woman and their scientific validation

Food Groups	Food preparations	Traditional wisdom	Scientific validation	References
Others	*Samauni* (Made from jaggery, *desi ghee* and ajwain)	It is given to cure constipation.	Ghee and jaggery prevents constipation after delivery and gives energy. Thiomole in *ajwain* acts as analgesic.	Kaur 1999
	Sund (Dry ginger powder) with jaggery and *desi ghee*	It helps in clearing the blood clots from uterus.	It is a galactagogues prepared and consumed during lactation phase to provide sufficient milk secretion to nourish the baby. Dry ginger also helps to heal the body.	Iyer *et al* 2009
	Panjiri (wheat flour, desi ghee,edible gums, betelnuts, fox nuts, almonts, fennel seeds, *ajwain*, *kamarkas, Musli*)	It is given to provide strength to the body of mother lost during birth process.	It is rich carbohydrate, fats and micronutrients which helps to restore energy that the mother lost during the birth process. It is nutritious product which also helps to improve milk production.	Kaur 1999
	Parshad (Made from wheat flour, Jaggery, *desi ghee* and *ajwain*)	It is given for few days after delivery of the baby.	The preparation act as bulk laxative and thiomole in *ajwain* acts as analgesic and gives energy.	Kaur 1999

Table 4.12 Traditional foods prepared for elders and their scientific validation

Food Groups	Food preparations	Traditional wisdom	Scientific validation	References
Others	*Methre panjiri* (Prepared from fenugreek seeds, wheat flour, jaggery and dry fruits)	It is good for bones and joint pain.	Fenugreek is a very warming seed. It is used to treat constipation, high cholesterol, diabetes and obesity. Its smell is very pungent and is a nourishing seed. It has good quality of calcium and also boosts immunity.	Khare 2007
	Kaurd tumme (Bitter apple/ *Citrullus colocynthis L.*) *di panjiri* *(*Prepared from *Kaurd tumme,* wheat flour jaggery *and desi ghee)*	It helps in proper functioning of gastrointestinal tract.	Bitter apple has extremely bitter taste. Seeds are rich source of oil and protein with superior fatty acid and amino acid profile. There are number of bioactive compounds such as cucurbitacin, flavonoids and polyphenols are present in *Citrullus colocynths* which are further responsible for medicinal properties. It possess a range of uses in diabetes, common cold, cough, asthma, joint pain etc.	Bhasin e*t al* 2020
	Methre di pinni (prepared from methre, milk,wheat flour, desi ghee and dry fruits)	It is good for joint pain.	Fenugreek is a very warming seed. It is used to treat constipation, high cholesterol, diabetes and obesity. Its smell is very pungent, and it is a nourishing seed.	Khare 2007

4.5.7 Food preparations for elders

Indigenous traditional knowledge regarding food preparation for elder is presented in Table 4.12. *Methre di panjiri* was prepared by roasting wheat flour in desi ghee and overnight soaking the fenugreek seeds to reduce its bitter taste. It is good for bones and joint pain. Scientifically fenugreek was a very warming seed. It was used to treat constipation, high cholesterol, diabetes and obesity. It smell was very pungent, and it is a nourishing seed.

Tumme di panjiri was basically prepared by adding bitter apple. Scientifically bitter apple has extremely bitter taste. Seeds were rich source of oil and protein with superior fatty acid and amino acid profile.There are number of bioactive compounds such as cucurbitacin, flavonoids and polyphenols are present in Citrullus colocynthis which are further responsible for medicinal properties. It posses a range of uses in diabetes, common cold, cough, asthma, joint pain etc.

Methre di pinni has scientific base that fenugreek was a very warming seed. It was used to treat constipation, high cholesterol, diabetes and obesity. Its smell was very pungent, and it was a nourishing seed.

CHAPTER V

SUMMARY

Indigenous traditional knowledge (ITK) may be defined as the knowledge that is exceptional to a given culture or society, which give base to agriculture, healthcare, food preparation, education, environmental conservation and other life processes on local level (Kaur 1999). ITK is the sum of information or practices that are based on people's accumulated experiences. Indigenous traditional knowledge is the unique information confined to a particular culture or society. It is the possible contribution to food security through various food preservation and preparation methods. Food security at the household level refers to the ability of rural woman to provide special foods all the time to meet the dietary requirements and cultural preferences of their household members. ITK regarding food preparation is now a day's eroding due to change in the lifestyle of the people, change in food habits, and various environmental factors. ITK is lost during transfer from one generation to the next generation unless it was formally documented and preserved. It is important to conserve to revive the healthy cultural nutrition practices for building wellbeing based on local food. Documentation of their vital knowledge is necessary before the old generation passes away, so it is important to protect and retain ITK.

One hundred rural woman of age above sixty years were considered the subjects who supplied information on traditional food preparations. Semi Structured interview schedule was prepared to collect indigenous traditional knowledge relating to different food preparations cooked by the selected rural woman. Snowball random sampling technique was used for collection of data. The data were collected by the personal interview method from all the rural woman and the responses were recorded in the schedule. During data collection, probing of further questioning was done to clarify and obtain desired information. Scientific validation of indigenous traditional knowledge regarding food preparation was carried out through reviewing the literature present. The books on allopathy and Ayurvedic medicines, research articles, dictionary and scientific bulletins were consulted to find out the scientific base of indigenous knowledge. The indigenous knowledge on various aspects of food preparations were documented in a form of booklet to keep record of traditional food preparations.

Majority of the households were belonging 60- 70 years of age i.e. 87% and minimum belong to age group of 81-85 years of age. Sixty-two out of hundred respondents were grandmothers and thirty-eight were mothers. Total 68 food preparations were collected from different households prepared for different age groups. Out of 68 food preparations 20 were cereal and millet based recipes out of which 13 were consumed during winter, 2 during summer and 5 during all seasons of the year. Similarly, 6 food preparations were cereal based

and out of which 2 were consumed during winter and 4 throughout the year. There were four fruit and vegetable based preparations consumed during winter season. Four milk and milk-based preparations were reported out of which 3 were consumed during all seasons and one during winter. Nuts and oil seeds based food preparation was only dry dates. Thirty-three preparations were herbs and medicinal plants based out of which 15 were consumed during winter season, one during summer season and 17 food preparations were consumed throughout the year.

Out of 68 food preparations, 6 were specifically prepared for infants. There were eight food preparations specifically prepared for different physiological groups i.e. 4 for pregnant woman and 4 for lactating woman. Only three food preparations were prepared specifically for the elders. The remaining fifty food preparations were prepared for all the age groups.

The consumption pattern of these food preparations showed that 21 out of 68 food preparations were consumed during early morning, 10 consumed during breakfast, 43 consumed during mid-morning, 35 consumed during lunch, 51 consumed during evening, 12 consumed during dinner and 21 food preparations were consumed during bed time.

Majority of identified indigenous traditional knowledge regarding food preparations of rural women were found to be unique in many respects. They knew that a particular food item helped to ensure good health.. Majority of the preparations were used to cure common ailments in infants. The scientific base behind them shows that they have medicinal properties and other activities. Similarly, there were calories and protein rich food preparations given to the preschool children for their proper growth and development. Some concoctions were also prepared to cure the different infecions.

The food preparations prepared for adolescents were high in energy, protein, fibre and minerals to promote overall good health. There were some herbal based food preparations which were consumed to cure ailments, infections and act as blood purifier (*Chasku*). These food preparations for adolescents have scientific base which approve the traditional wisdom. The food preparations prepared for adults are rich in nutrients, provides satiety and improve the overall health. The herbal based food preparations were enduring health and also treat the cold and cough.

The foods prepared for the pregnant woman were confined to use cereals, milk and dry fruits. These food preparations were help to improve overall health, relieve constipation improves digestion and act as energy boosters. Similarly, for lactating woman food preparations based on cereals, milk products, nuts, oilseeds and herbs were consumed. These food preparations help to restore energy that the mother lost during the birth process, to improve the milk production and to clear blood clots from uterus.

The food preparations for the elders were prepared to provide strength to their bones, to boost up their immunity and to provide strength to the body. To summarize the findings of the present study, it can be said that in the modern era, the indigenous knowledge of rural woman with respect to food preparations found its recognition through scientific rationality.

The study concluded that the documented traditional food items can be revived for food security, nutrition and health. The rationale of the traditional wisdom given by respondents for food preparations was found in consonance with scientist's perception. Most commonly prepared traditional food preparation were *gulgle* on rainy days, *warian* to add taste to the dish, milk with desi ghee for pregnant women, after delivery *panjiri* for lactating mother, *kanak di pinni*, *chawal di pinni*, *jau di ghat*, and *sattu* as snack and fennel, *ajwain*, *sund*, *harar* concoctions were commonly prepared. *Smauni*, *panjiri* and *prashad* for lactating woman.

On the basis of the results of the study, it is recommended that the documented food preparations should be popularized as an attempt to preserve traditional wisdom regarding health foods.

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Plate 4.1 Feeding goat milk with cotton wick

Plate 4.2 Ingredients for different preparations (a- *Harar,* b- *Supari,* c- *Majuphal* d- *jaiphal,* e- *Sund* (dry ginger) f- *Suhaga g-Naspal, h-Nausadar,* i- Black sesame seed j- white sesame seed, k- Alsi (flax seed) l- *Khas khas)*

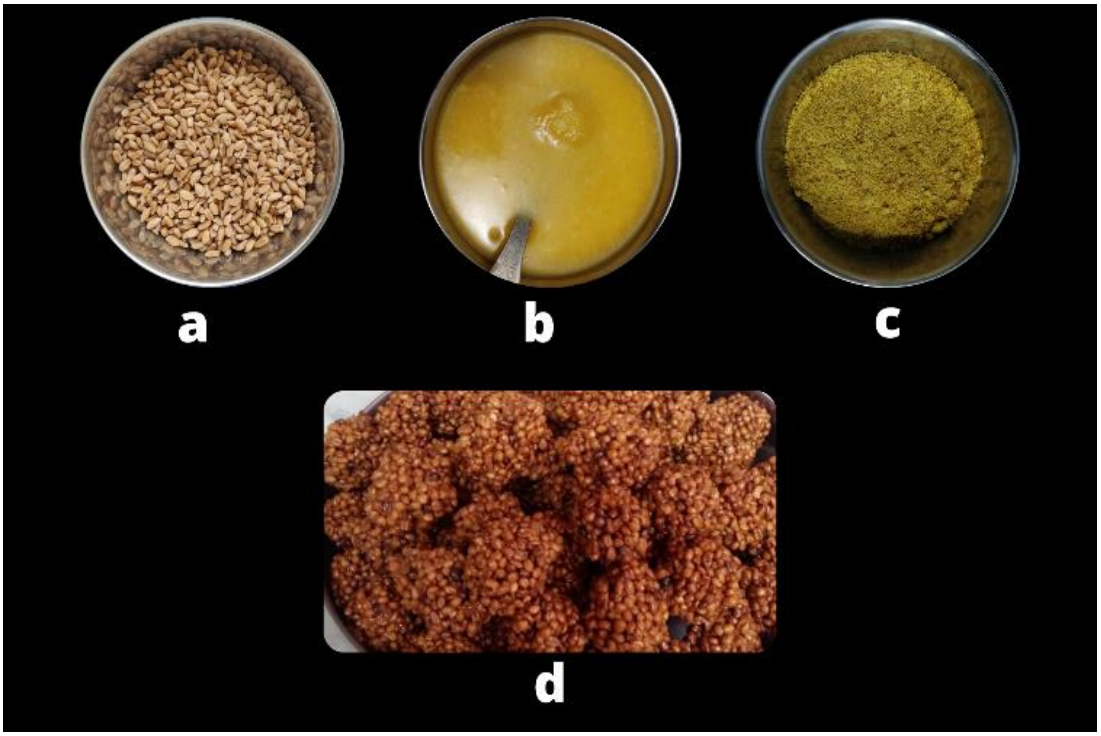

Plate 4.3 ***Kanak de laddu / pinni/ Bhoot pinni (*****a- Whole wheat, b- Desi ghee, c- Jaggery, d-** ***Kanak de laddu)***

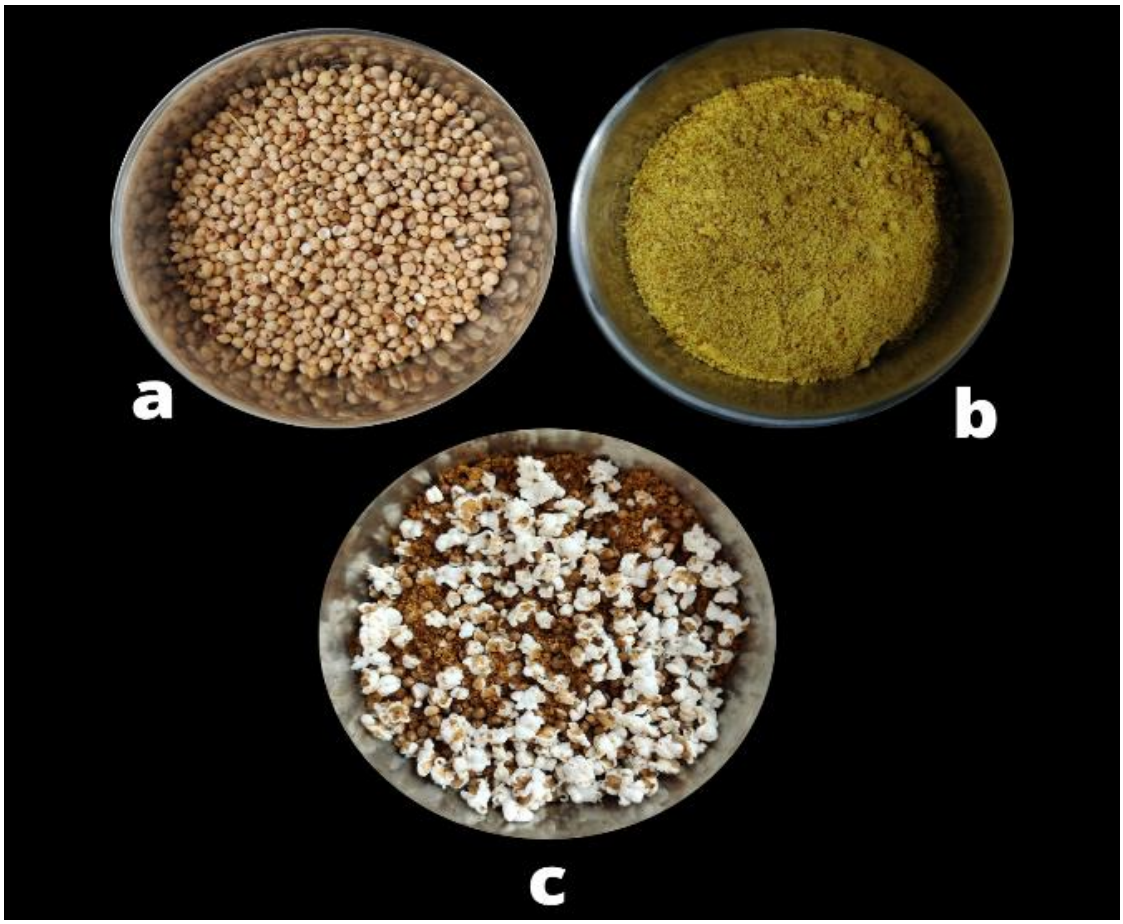

Plate 4.4 ***Jowar da bhooga (*****a-** ***Jowar,*** **b- Jaggery, c-** ***jowar da bhooga)***

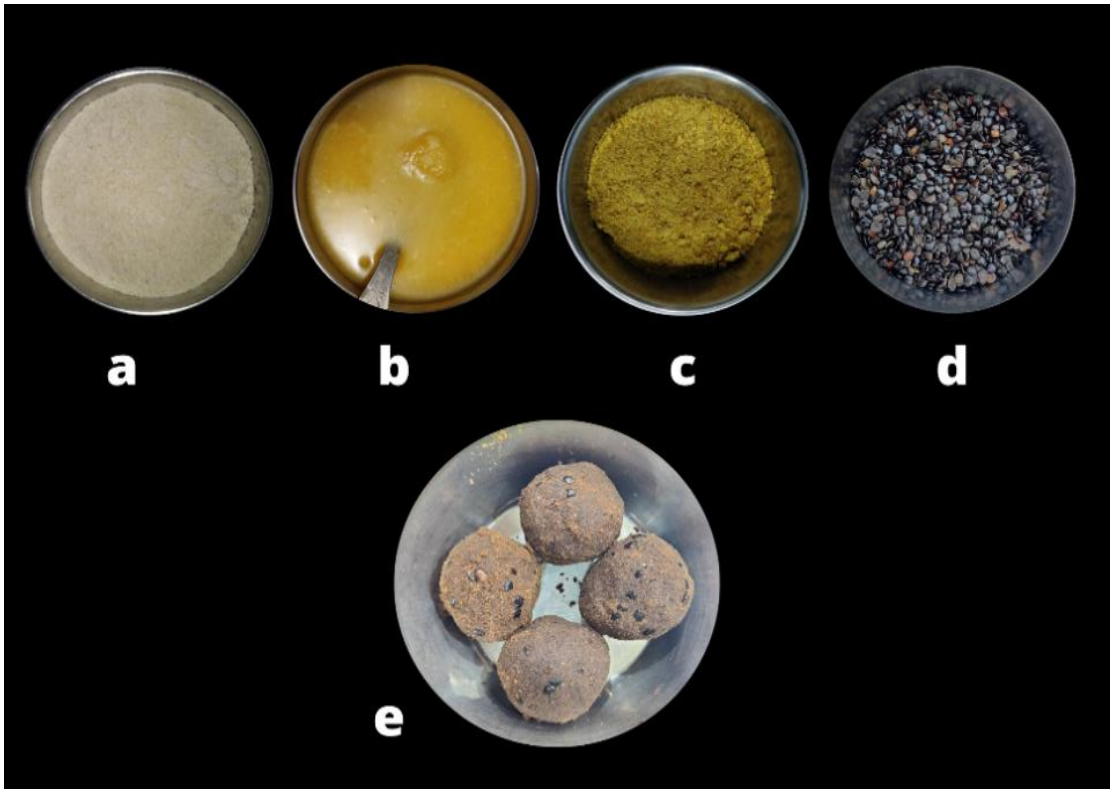

Plate 4.5 ***Chasku di pinni (*****a- wheat flour, b- Desi ghee, c- jaggery d-** ***chasku,***
e- ***chasku di pinni)***

Plate 4.6 ***Jau di ghat (*****a-** ***Jau*****, b- Black gram, c- jaggery d-** ***Jau di ghat)***

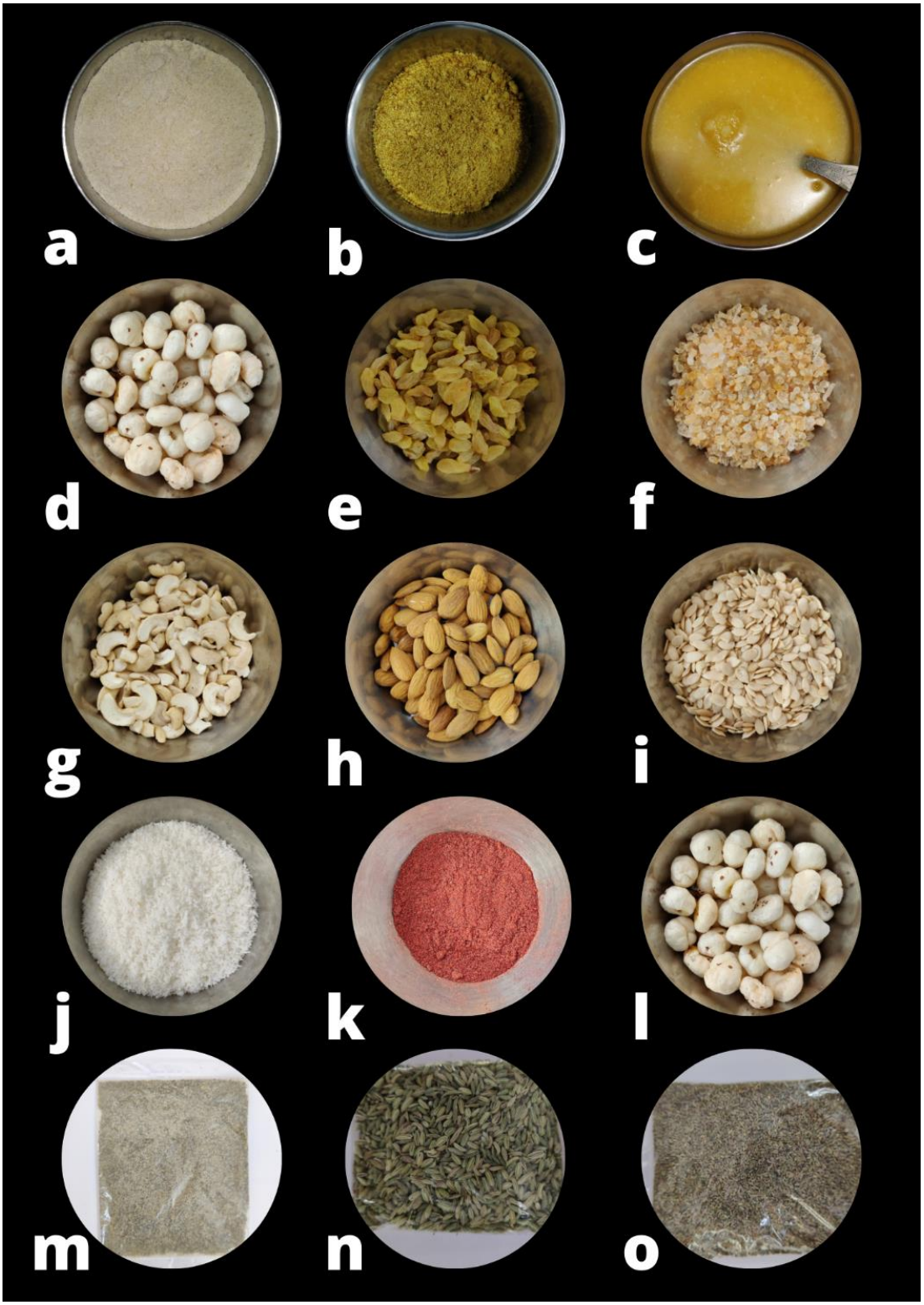

Plate 4.7 Ingredients for *panjiri* for lactating women *(*a- Wheat flour, b- Jaggery, c- Desi ghee, d- *Full makhane,* e- Raisins, f- *Gond,* g- Cashew nuts, h- Almonds, I- *Magaj,* *j*- coconut, k- *kamarkas,* l- *Full makhane,* M- Black pepper powder, n- *Saunf,* o- *Ajwain)*

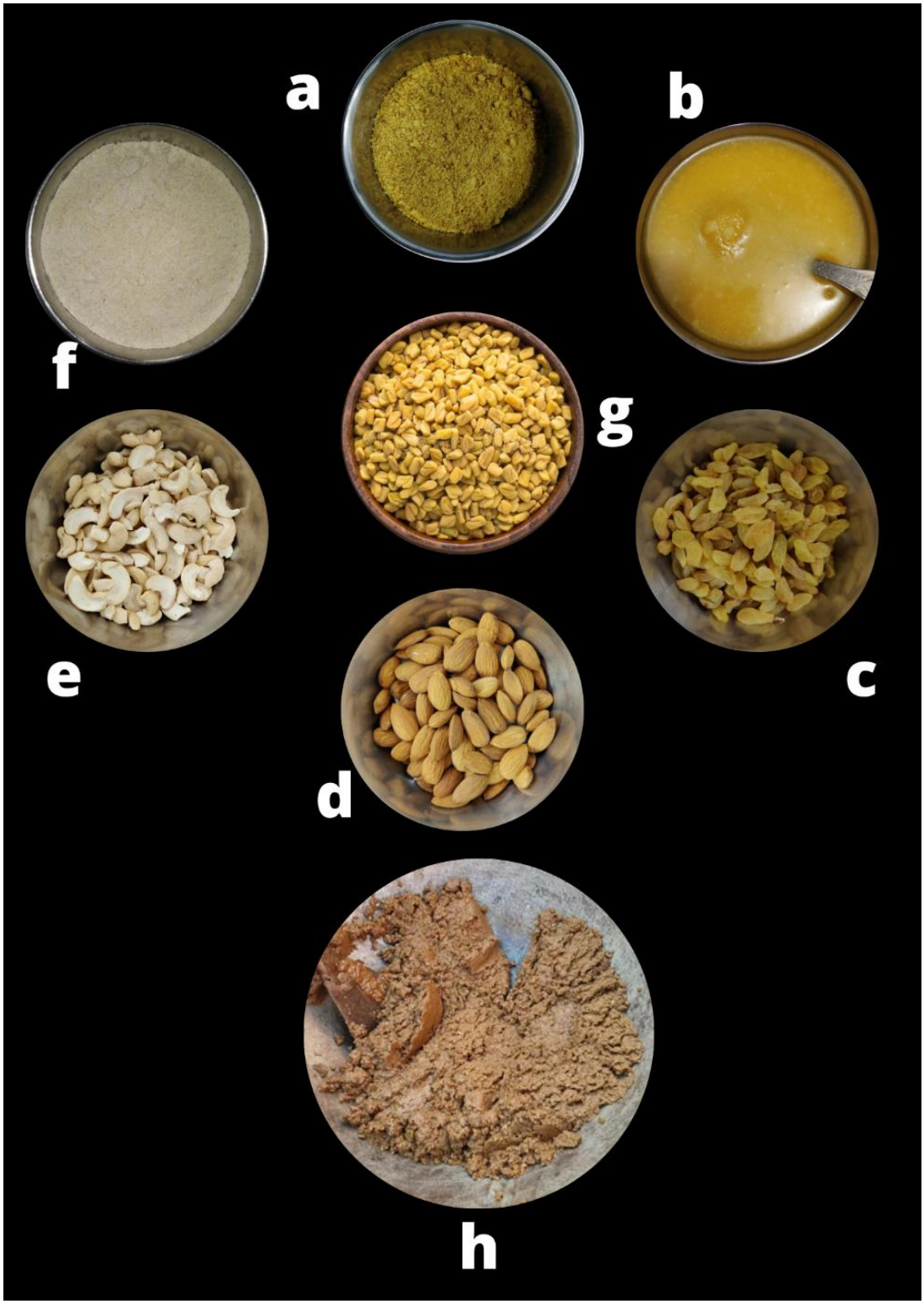

Plate 4.8 ***Methre di panjiri (*****a- Jaggery, b- Desi ghee, c- Raisins d- almonds e- Cashewnuts, f- Wheat flour g-** ***methre di panjiri)***

ANNEXURE I

Date of Data Collection: _____

INTERVIEW SCHEDULE FOR INDIGENOUS TRADITIONAL KNOWLEDGE REGARDING SPECIFIC FOOD PREPARATIONS

Name of Respondent	
Mobile No.	
Village	
Block	
Place in family	
Age	

Indigenous traditional knowledge regarding food preparations for special groups					
Special Groups	**Cereals**				
Infants (6 to 12 Months)	**Recipe Name**	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
	Pulses				
	Recipe Name	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
	Fruit and Vegetables				
	Recipe Name	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**

Preschool Children (1 to 5 Years)					
Special Groups	**Cereals**				
Preschool Children (1 to 5 Years)	**Recipe Name**	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
	Pulses				
	Recipe Name	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
	Fruits and Vegetables				
	Recipe Name	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
School Children (6 to 12 Years)					
Special Groups	**Cereals**				
Preschool Children (6 to 12 Years)	**Recipe Name**	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
	Pulses				
	Recipe Name	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
	Fruits and Vegetables				
	Recipe Name	**Ingredients**	**Traditional Wisdom**	**Season**	**Methodology**
Adolescents or Teenage					

Special Groups	Cereals				
Adolescents Or Teenage	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Pulses				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Fruits and Vegetables				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
Adults					
Special Groups	Cereals				
Adults	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Pulses				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Fruits and Vegetables				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
Pregnant Women					

Special Groups	Cereals				
Pregnant Women	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Pulses				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Fruits and Vegetables				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
Lactating Women					
Special Groups	Cereals				
Lactating Women	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Pulses				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Fruits and Vegetables				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
Elders or Old Age					
Special	Cereals				

Groups					
Elders Or Old Age	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Pulses				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology
	Fruits and Vegetables				
	Recipe Name	Ingredients	Traditional Wisdom	Season	Methodology

ANNEXURE II

CEREALS AND MILLETS

Atta pinni / Wheat flour *pinni*

Ingredients:

Wheat flour / *Atta*	200g
Powdered sugar/ jaggery	200g
Desi ghee	200g
Coconut	100g
Dry ginger powder (*Sund*)	1Tbsp
Edible gums (*Gond*)	50g
Raisins (*Kishmish*)	50g

Method:

i. Grate the coconut.
ii. Take a heavy bottom *karahi* and heat *desi ghee*.
iii. Roast edible gum in *desi ghee* and remove from flame and cool & crush them.
iv. In remaining *desi ghee* roast the wheat flour till it becomes reddish brown in color and aroma develops.
v. Remove from flame and add dry ginger powder, raisins, coconut and edible gums.
vi. Add jaggery/ sugar in wheat flour mixture and mix well.
vii. Cool it down and make *pinnis*.

Atte ate khoye di pinni

Ingredients:

Wheat flour	½Kg
Powdered sugar	½Kg
Milk or *Khao*	1L or 250g
Desi ghee	250g
Raisins (*Kishmish*)	50g
Melon seeds (*Magaj*)	50g

Method:

i. Take a heavy bottom *karahi* and boil the milk until its volume and make khoa
ii. Take *desi ghee* in heavy bottom *karahi* and roast wheat flour till it becomes reddish in color and aroma develops.
iii. Add the prepared khoa and sugar and mix well.
iv. Remove roasted flour from flame and add raisins and *magaj*.
v. Cool it down and make *pinnis*.

Bajra pinni

Ingredients:

Pearl Millet (*Bajra*)	500g
Jaggery	500g

Method:

i. Roast pearl millet in hot sand and sift it.
ii. Add crushed jaggery in hot *bajra* grains.
iii. Mix *bajra* in the jaggery syrup properly.
iv. Cool it down and make *pinnis*.

Bajra moth di khichri

Ingredients:

Pearl millet (*Bajra*)	1kg
Moth Beans	½Kg
Desi ghee	6Tbsp
Salt	1Tsp

Method:

i. Sprinkle water on pearl millet.
ii. Process pearl millet with pestle and mortar called '*Ukhli'* in local language.
iii. Dry in sun and remove the outer peel of the grounded pearl millet by winnowing.
iv. Mix the moth beans with pearl millet.
v. Take earthen pot (*matka*) and add water, when water starts boiling add ghee washed and cleaned moth & bajra.
vi. Cook on low heat for 2-3 minutes
vii. Add milk or curd and ghee while serving.

Chawal di pinni / Rice *pinni*

Ingredients:

Rice	1Kg
Jaggery	600g
Desi ghee	100g
Black pepper	50g
Dessicated coconut	100g
Milk	250ml

Method:

i. Grind the rice into rice flour.
ii. Take *karahi* and dry roast the rice flour and remove.

iii. Add *desi ghee* in *karahi* and heat it.

iv. Add rice flour, sugar roast a little and mix them properly.

v. Add black pepper whole and coconut along with boiled and cooled milk.

vi. Add chopped almonds and cashew nuts.

vii. Mix them properly.

viii. Cool the mixture and then make *pinnis*.

***Dalia*/ Porridge**

Ingredients:

Roasted and broken wheat	30g
Milk	1Glass
Sugar	30g
Water	3 cup
Desi ghee	10g

Method:

i. Take a *karahi* and dry roast the wheat.

ii. Grind the roasted whole wheat by using traditional method called *chakki* in local language.

iii. Add ghee in pan and then roast the broken wheat and add water & cook

iv. Add boiled milk when it becomes thick.

v. Add sugar and mix properly, remove. Serve warm and cool.

Dudh walia sevian

Ingredients:

Wheat *sevian*	100g
Milk	2 glass
Cardamom	2 piece
Sugar	100g

Method:

i. Take a pan and boil the milk, then simmer the flame.

ii. Roast the *sevian* in *desi ghee*.

iii. Add roasted *sevian* in boiled milk, cook on low heat.

iv. Boil the milk again and add sugar & crushed cardamom.

v. Mix properly and serve.

Gur di roti

Ingredients:

Wheat flour	100g
Jaggery	275g
Desi ghee	15g
Water	150ml

Method:

i. Take a pan and boil the water.
ii. Add jaggery in boiled water and mix properly to make jaggery syrup and strain it.
iii. Take another bowl and add wheat flour, make dough with syrup. Add 5g ghee and mix it
iv. Knead roast dough well, keep for 30 minutes and again knead it.
v. Make *chapattis* from the dough, serve with butter and mango pickle

Gur wale chawal

Ingredients:

Rice	100g
Jaggery	75g
Fennel (*saunf)*	1 tsp
Coconut chopped	1Tbsp
Desi ghee	2Tbsp

Method:

i. Soak rice in water for 20 minutes.
ii. Take water, boil it and mix jaggery to make jaggery syrup, add *saunf.*
iii. Take a pan and add *desi ghee* in it
iv. Add rice and cook for 4-5 minutes.
v. Add jaggery syrup and cook on low heat.
vi. Add chopped coconut flakes and mix well.
vii. Cook the rice properly and serve hot.

Gulgle

Ingredients:

Wheat flour	150g
Jaggery	75g
Fennel seeds (*Saunf*)	2Tbsp
Mustard oil	For frying

Method:

i. Take boiling water and mix the jaggery to make jaggery syrup.
ii. Take crushed s*aunf* and mix it with wheat flour.
iii. Prepare the wheat flour batter with strained jaggery syrup.
iv. Take *Karahi* and add the mustard oil for frying.
v. Pour batter little with hand and fry them in the oil on low heat.

Jowar da bhooga

Ingredients:

Sorgum (*Jowar*)	1Kg
Jaggery	250g

Method:

i. Wash the whole jowar grains.
ii. Drain and air dry on a cotton cloth for 30 minutes.
iii. Heat the sand and roast them to pop up.
iv. Heat the jaggery in little water and make thick paste.
v. Add jowar in jaggery and mix well.
vi. Cool it down, grease a thali and spread, when cool cut pieces.

Jaun da sattu

Ingredients

Barley (*Jaun*)	1Kg
Chickpea	½ Kg
Powdered jaggery	½ Kg

Method:

i. Roast barley and chickpea seperately in hot sand.
ii. Remove the outer covering by rubbing in between hands.
iii. Clean by winnowing, grind both separately using mortar and pestle tool.
iv. Add four teaspoons of sattu in 200 ml milk or water with 1 tsp powdered jagegry.
v. Drink daily at breakfast and afternoon.

Jaun di ghat

Ingredients

Barley (*Jaun*)	1Kg
Chickpea	1Kg

Methods:

i. Sprinkle water on barley.
ii. Rub the moist barley between the hands.

iii. Sundry the barley and clean by winnowing

iv. Roast the dried barley and chickpea in sand.

v. Mix them and eat as snack.

Kanak diya Bakliyan

Ingredients:

Whole wheat	500g
Powdered jaggery	500g

Method:

i. Boil water, add whole wheat in water and simmer at low flame for 2-4 hours.

ii. Take out the wheat when it becomes soft.

iii. Add jaggery powder and mix them.

Khichri

Ingredients:

Rice	½ Katori
Lentil dal/ moong dal	¼ Katori
Desi ghee	1Tbsp
Salt	According to taste
Water	2 Katori

Method:

i. Take an earthen pot and add water and boil it

ii. Soak rice and dal for 20minutes, when boiling add washed dal rice and salt and ghee.

iii. Stir well and till cooked semi liquid consistence.

***Makki de boone dane* / Popcorn**

Ingredients:

Maize	100g

Method:

i. Roast the maize grains in hot sand.

ii. Popcorns are popped up and ready to eat.

***Makki da daliya* / Maize porridge**

Ingredients

Maize porridge	50g
Jaggery	30g
Salt	a pinch
Milk	1 glass

Method:

i. Boil water, add maize porridge and cook on low flame.
ii. Add jaggery and salt in cooked porridge and mix properly.
iii. Add hot milk and serve.

Satnaje di pinni

Ingredients:

Whole wheat	200g
Roasted Bengal gram	200g
Maize	200g
Pearl millet (*Bajra*)	200g
Finger millet (*Ragi*)	200g
Sorgum (*Jowar*)	200g
Barley (*Jaun*)	200g
Fennel seeds (*Saunf*)	½ Katori
Carom seeds (*Ajwain*)	½ Katori
Jaggery	1 Kg
Desi ghee	750g

Method:

i. Roast all cereals separately i.e. whole wheat, pearl millet, sorgum, finger millet, barley and maize and grind in a traditional mill (*chakki*).
ii. Add rosted channa flour to above.
iii. Grind the fennel seeds and carom seeds into powder form.
iv. Take heavy bottom *karahi* and heat *desi ghee*.
v. Add mixture of flour and roast them properly till it produces aroma.
vi. Add the fennel seed and carom seed powder.
vii. Remove it from flame and cool it down.
viii. Crush jaggery, add in above while hot jaggery and mix properly.
ix. Make *pinnis*.

Sevian

Ingredients:

Wheat *Sevian*	100g
Desi ghee	20g
Sugar	50g
Water (for syrup)	20g

Method:

i. Take ghee in a *karahi* and roast the *sevian* till brown.
ii. Add jaggery.
iii. Add water to cook them properly.
iv. Serve hot.

Kanak di pinni / Bhoot pinni/ kanak da maroonda

Ingredients:

Whole wheat	1Kg
Jaggery	½ Kg
Desi ghee	1 Serving spoon

Methods:

i. Soak whole wheat in water properly.
ii. Simmer wheat in water for 2-3 hours.
iii. Take out the wheat and sun dry for 5-6 hours.
iv. Roast wheat grains in hot sand.
v. Take a pan and heat *desi ghee*.
vi. Add jaggery and melt it properly.
vii. Add roasted wheat grains and mix properly.
viii. Cool down the mixture and make *pinnis*.

PULSES AND LEGUMES

Besan di pinni

Ingredients:

Chickpea flour (*Besan*)	1Kg
Desi ghee	½ Kg
Jaggery	1kg
Water	400ml

Method:

i. Make flour from the chickpea using traditional grinder.
ii. Take heavy bottom *karahi* and heat *desi ghee* in it.
iii. Add chickpea flour until it starts producing aroma.
iv. Switch off the flame.
v. Make syrup of jaggery and water.
vi. Add jaggery syrup and mix it properly.
vii. Cool it down and make *pinnis*.

Besan de laddu

Ingredients:

Besan	1Kg
Desi ghee	750g
Sugar	1Kg
Khoa	½ Kg
Roasted *magaj* (melon seeds*)*	100g

Method:

i. Take heavy bottom *karahi* and heat *desi ghee*.
ii. Add *besan* and roast it until aroma begins.
iii. Simmer the flame, add sugar into roasted *besan* and mix properly.
iv. Remove it from flame and add khoa.
v. Mix khoa and *magaj* into it properly.
vi. Make *laddus*.

Dal diya warian

Ingredients:

Green gram (*Moong dal*) / Moth beans	1Kg
Moth beans	1Kg
Potatoes	1Kg
Asafoetida (*heeng*)	¼ tsp

Method:

i. Make flour from green gram / moth beans using traditional grinder called *chakki* in local language.
ii. Dissolve heeng in little water and make dough from the dal flour.
iii. Keep the dough for 12 hours (during night) for fermentation.
iv. Boil potatoes, peel and cool & mash them.
v. Mis mashed potatoes with dal dough.
vi. Add all spices.
vii. Make small shapes from dough.
viii. Dry them under sun on cloth and *warian* is ready to use in gravy vegetable.

Warian

Ingredients:

Mahan di dal / black gram dal	1Kg	Grated	1Kg
Asafoetida (*Heeng*)	¼ tsp	Salt	100g
Cumin seeds (Jeera)	50g	Red chilli	40g

Black pepper	30g
Fenugreek leaves (dry)	20g

Method:

i. Clean the dal and soak for 7-8 hours and squeeze *petha* water
ii. Add cumin seeds, fenugreek leaves, carom seeds and asafoetida.
iii. Grind dal, add petha water and keep batter overnight.
iv. Add petha and all spices in fermentd dal dough
v. Make small balls with hands from the dough.
vi. Press the balls from center with three fingers, make it empty from center.
vii. Sun dry them on malmal cloth until they become fully dried , pack air tight.

NUTS AND OIL SEEDS

Chhuara / Dry dates

Ingredients:

Dry dates	10-15 no.
Milk	2-4Litres

Method:

i. Pour milk in earthen pot for simmering.
ii. Add dry dates in the milk.
iii. Simmer them together for 4-5 hours.
iv. Eat boiled dry dates along with milk.

FRUITS AND VEGETABLES

Chulai da saag (Amaranth)

Ingredients:

Amaranth leaves (*Chulai* leaves)	500g	Ginger	20g
Chickpea (*channa*)	½ Katori	Onion	one medium
Garlic	20g	*Desi ghee*	2tsp
Red chili powder	1Tbsp		
Salt	According to taste		

Method:

i. Soak chickpeas overnight in water and cook by adding salt till soft.
ii. Wash amaranth and chop it.
iii. Take a pan and boil water & cook chopped *chulai* by adding salt red chilli powder and mash it.
iv. Heat ghee, add onion, garlic, ginger and cook them.

v. Add boiled *channa* and mashed *chulai* and cook again for 10-15 minutes.

vi. Grind them after cooking.

Gajrela

Ingredients:

Carrot	1Kg
Milk	2Kg
Almonds	10-12
Cardamom	2-3
Powdered sugar	250g

Method:

i. Wash the carrots and peel the carrots by using peeler and wash again.

ii. Grate the carrots.

iii. Take a heavy bottom *karahi* and heat *desi ghee*.

iv. Roast carrots in *desi ghee* and add milk in the carrots and cook till all milk becomes khoa.

v. Add sugar and cook for 10 minutes on low heat.

vi. Add the chopped almonds and crushed cardamom.

vii. Mix well all the ingredients and serve.

Hallon di Bhurji

Ingredients:

Hallon	250g
Potato (Medium)	150g
Coriander leaves	few leaves
Desi ghee	50g
Garam masala	1tsp
Ginger	20g
Garlic	4 cloves
Onion (Medium)	2
Red chili powder	½tsp
Salt	According to taste
Tomato (Medium)	2
Black pepper	¼ tsp
Turmeric	¼ tsp

Method:

i. Wash *hallon* well and chop in small pieces like spinach.

ii. Take a *karahi* and roast the *hallon* in 2 Tbsp of *desi ghee*.
iii. Take another *karahi* and add remaining *desi ghee*.
iv. Roast onion, garlic and ginger properly till golden brown.
v. Add tomato paste and mix well.
vi. Add cut potatoes, *hallon*, red chili powder, turmeric, garam masala and salt and cook on low heat.
vii. Take off the flame, add black pepper and coriander leaves

Shalgam palak

Ingredients

Turnip (*Shalgam*)	500g
Spinach`	250g
Coriander leaves	50g
Desi ghee / Mustard oil	25g
Green chili	4-5
Garlic	4-5 clove
Ginger	10g
Garam masala	1tsp
Jaggery	100g
Onion (Medium)	2
Red chilli powder	1tsp
Tomato (Medium)	2
Turmeric powder	1tsp
Salt	¾ tsp

Method:

i. Peel, wash and cut the turnip into small pieces.
ii. Take a pan and add little water and boil it.
iii. Add turnip, salt, turmeric powder and cook well.
iv. Mash the turnip when they become soft.
v. Add jaggery in it and mix well, put it aside.
vi. Take a *karahi*, heat *desi ghee* in it.
vii. Roast chopped garlic, onion and ginger till golden brown, add little water.
viii. Add washed and chopped spinach & spices and cook little.
ix. Chop the tomato into small pieces and add into it.
x. Mix the mashed turnip into it and cook for 5-10 minutes.

xi. Add garam masala.

xii. Add coriander leaves on top.

xiii. Serve hot with ghee and *chapatti*.

MILK AND MILK PRODUCTS

Bauli (Bovine colostrum)

Ingredients:

Milk	1Kg
Jaggery	150g

Method:

i. Take a pan and add milk.

ii. Put it on flame for boiling.

iii. When milk starts to boil then add jaggery slowly in parts.

iv. Milk starts to coagulate.

v. *Bauli* is ready when coagulated properly.

Besan wala dudh

Ingredients:

Milk	1Glass
Gram flour *(Besan)*	2tsp
Desi ghee	1Tbsp
Jaggery or sugar	1Tbsp

Method:

i. Take a pan and heat *desi ghee*.

ii. Add *besan* and roast it properly.

iii. Take a bowl and boil milk.

iv. Add sugar or jaggery.

v. Add 1-2 tbsp roasted *besan* in a glass of milk.

Desi ghee in milk (for pregnant and lactating women)

Ingredients:

Milk	1Glass
Desi ghee	1Tbsp

Method:

i. Boil the milk in a pan.

ii. Add ghee while serving.

Goat milk (For infants)

Ingredients:

Goat milk	½ Glass
Water	For dilution

Method:

i. Take milk in a pan.
ii. Dilute it with water.
iii. Boil the milk.

OTHER / HERBS AND MEDICINAL BASED RECIPIES

Alsi Pinni

Ingredients:

Flax seeds (*Alsi*)	1Kg
Wheat flour	1Kg
Shakar/ powdered jaggery	1Kg
Desi ghee	1Kg

Method:

i. Take *ghee* in a heavy bottom *karahi* and heat it.
ii. Add flour and cook the flour properly till it leaves the sides of pan.
iii. Dry roast flax seeds and grind it properly and mix it with cooked flour.
iv. Add *shakar* or set in a greased *thali* and cut pieces.

Aloevera Sabji

Ingredients:

Aloevera	½Kg
Black salt	½Tbsp
Desi ghee	2Tbsp
Red chilli	½tsp
Salt	1tsp
Turmeric	½tbsp
Methe	¼ tsp
Kalonji	¼ tsp
Zeera	½ tsp

Method:

i. Wash aloevera leavesand cut both sides with thornes.
ii. Peel the aloevera and remove the soft part from inside.

iii. Take ghee in a pan and cook chopped aloevera and add zeera, *methe, kalonji* seeds and cook thoroughly.

iv. Add turmeric, salt, red chilli, black salt and mix well cook cook properly.

Bhakra di panjiri

Ingredients:

Bhakra flour	1Kg
Desi ghee	½Kg
Shakar	½Kg
Almonds	100g
Carom seeds (*Ajwain*)	4Tbsp
Cashew nuts	100g
Khas khas (poppy seeds)	50g

Method:

i. Chop the almonds and cashew nuts.

ii. Take ghee in an heavy bottom *karahi* and roast *bhakhra* flour for 15- 20 minutes.

iii. Add carom seeds, *khas khas*, almonds and cashews.

iv. Remove from flame and mix jaggery.

Concoction of *Ajwain* and *Saunf* (For infants)

Ingredients:

Carom seeds (*Ajwain*)	1Tbsp
Fennel seeds (*Saunf*)	1Tbsp
Water	1glass

Method:

i. Boil water in a pan.

ii. Add carom seeds and fennel seeds.

iii. Boil the whole mixture until it is reduced to 1/3rd of water.

iv. Drops are given to infants.

Concoction of *Harar, Supari* and *Jaiphal* (for infants)

Ingredients:

Harar	one piece
Jaifal	one piece
Supari	one piece

Method:

i. Rub all of the above on earthen lid called *chapni* in local language.

ii. Add drops of water while rubbing them in *chapni*.

iii. Give drops of the water to infant.

Deconcoction of *Saunf, Ajwain* and *Gulab* (For Infants)

Ingredients:

Carom seeds (*Ajwain*)	1tsp
Fennel seeds (*Saunf)*	1tsp
Rose petals (*Gulab*)	3-5
Water	1Glass

Method:

i. Take a pan and boil fennel seeds, carom seeds and rose petals in glass of water.
ii. Boil them until the water becomes 1/3rd of its initial volume.
iii. Served as drops.

Concoction of *Harar* and *kath supari* (For Infants)

Ingredients:

Harar	one piece
Kath supari	one piece

Method:

i. Rub the ingredients on earthen lid called *chapni* in local language.
ii. Add drops of water while rubbing them.
iii. Give drops of the water to infant.

Concoction of Almonds, *Naspal and Harar* (For Preschool children)

Ingredients:

Almonds	2
Black cardamom (*Elaichi*)	1-2
Harar	one
Naspal (Dried pomegranate peel)	¼th pomegranate

Methods:

i. Rub all of them separately at earthen lid called *chapni* in local language.
ii. Add drops of water while rubbing them.
iii. Give drops of of concoction to child.

Coconut filled with *khas khas*

Ingredients:

Coconut (Dry)	one piece
Khas khas (poppy seeds)	50g
Milk	2Kg

Sugar	1Serving spoon

Method:

i. Make hole in coconut and remove white portion from it.
ii. Fill the coconut with *khas khas* and seal tight the hole with wheat flour dough.
iii. Put filled coconut in milk and cook on low flame till it reduces to 1/4th.
iv. Add sugar and consume khas khas rubbery.
v. Coconut is cut into pieces and eat it.

Chasku

Ingredients:

Chasku seeds	500g
Powdered sugar	½Kg
Wheat whole	500g
Besan	500g
Desi ghee	1Kg
Almonds	100g
Carom seeds (*Ajwain*)	2Tbsp
Coconut (Dry)	100g
Full makhane (foxnuts)	100g
Fennel seeds (*Saunf*)	100g
Melon seeds (*Magaj*)	100g
Raisins *(Sogi)*	100g

Method:

i. Roast wheat grains in sand and remove.
ii. Add *chasku* in hot wheat and keep for half an hour.
iii. Grind both in flour form.
iv. Roast *besan* in ghee on low heat, stir continuously.
v. Add *chasku* flour and mix well and cook for 10 minutes.
vi. Add coarsely ground dry fruits.

Chasku ate di pinni

Ingredients:

Chasku	1kg
Wheat flour/ Roasted bengal gram	1kg
Desi ghee	1 kg
Shakar/ Powdered jaggery	1Kg

Method:

i. Dry roast *chasku* in *karahi* and make powder in grinder

ii. Take ghee in heavy bottom *karahi* and roast the wheat flour.

iii. Take off roasted wheat flour from flame and add *chaksu* in hot flour and mix well.

iv. Add *shakar* into the mixture and mix them all well.

v. Store it for one month in earthen pot, so that *chasku* bitter taste become sweet.

Coconut *pinni*

Ingredients:

Dry coconut powder	250g
Jaggery	250g

Method:

i. Heat jaggery with little water.

ii. Add coconut and mix well

iii. Make *pinnis* out of it.

Harar

Ingredients:

Harar	one

Method:

i. Rub *harar* on earthen lid called *chapni* by adding drops of water.

ii. Give drops of *harar* water to infant.

***Harar* and *Amla* powder**

Ingredients:

Harar	250g
Amla	½ Kg

Method:

i. Remove seeds and sun dry *harar* and *amla*.

ii. Grind them separately and make in powder form.

iii. Serve 1tsp with milk.

Kachi haldi di panjiri

Ingredients:

Wheat flour	1kg
Turmeric (Raw)	500g
Jaggery/ sugar	800g
Desi ghee	1kg

Method:

i. Peel and cut the turmeric into small pieces.
ii. Roast the turmeric till it become brown in color.
iii. Grind the roasted turmeric.
iv. Roast the wheat flour in *desi ghee*.
v. Add turmeric and mix well.
vi. Add sugar/ jaggery after turning off the flame, in hot and mix well

***Khas khas* with jaggery**

Ingredients:

Khas khas (poppy seeds)	2Tbsp
Jaggery	2Tbsp
Desi ghee	2Tbsp

Methods:

i. Take a pan and heat *desi ghee*.
ii. Roast *khas khas* in *desi ghee*.
iii. Add grated jaggery and mix well.

Khas khas di dodhi

Ingredients:

Khas khas (poppy seeds)	2Tbsp
Desi ghee	1Tbsp
Milk	1Glass
Sugar/ *Shakar*	1Tsp

Method:

i. Soak *khas khas* in water for half an hour and grind by adding little water.
ii. Roast the grounded *khas khas* in *Desi ghee*.
iii. Add milk in roasted *khas khas* and boil it.
iv. Add sugar and Serve hot.

Methi di pinni

Ingredients:

Methi	½Kg
Wheat flour	1Kg
Desi ghee	1Kg
Milk	1Kg
Almonds	250g
Cashew nuts	250g
Melon seeds (*Magaj*)	100g

Method

i. Roast *methi* and grind it
ii. Roast wheat flour in *desi ghee* till golden brown color appears and leaves sides of *karahi*.
iii. Add coarsely ground almonds, cashew nuts, *magaj and methi* powder & mix well.
iv. Make *pinnis* with wet hands.

Methre pinni /panjiri

Ingredients:

Methre	250g
Besan	½Kg
Powdered sugar	½Kg
Desi ghee	½Kg
Almonds	125g
Cashew nuts	125g
Khas khas	100g

Method:

i. Take heavy bottom *karahi* and cook the wheat flour stirring continuously in *desi ghee*, at low flame.
ii. Make *methre* flour by grinding and add to above mixture.
iii. Add coarsely ground almonds, cashews and *khas khas*.
iv. Add powdered sugar and mix well.

Neem Pakora

Ingredients:

Neem leaves	1Katori
Wheat flour	250g
Desi ghee	½Kg

Method:

i. Chop the neem leaves and mix with the wheat flour.
ii. Knead the wheat flour dough properly with water.
iii. Fry the *pakora* in *desi ghee*.

***Panjiri* (for lactating mother)**

Ingredients:

Wheat flour	1Kg
Desi ghee	1Kg
Desi sugar	1Kg

Almonds	250g
Black pepper powder	50g
Khas khas	100g
Cashew nuts	100g
Carom seeds (*Ajwain*)	50g
Dessicated coconut	50g
Cardamom powder (*Elaichi* powder)	50g
Dry ginger powder (*Sund*)	50g
Edible gums (*Gond*)	100g
Full makhane (Fox nuts)	100g
Fennel seeds (*Saunf*)	100g
Kamrkas	100g
Melon seeds (*Magaj*)	100g
Raisins	100g

Method:

i. Add half ghee into heavy bottom *karahi* and roast edible gums, *kamrkas* and *makhane* separately, then grind them and grind almonds & *khas khas* also.

ii. Add rest of the ghee into heavy bottom *karahi* and add flour into it and cook on low flame while stirring till it leaves the sides of *karahi* a fragrance developed.

iii. Remove the mixture from flame and add roasted edible gums, *kamrkas, makhane, magaj*, raisins and also coarsely ground *ajwain, khas khas,* dry ginger powder, fennel seeds, black pepper powder and sugar.

iv. At the end add coarsely ground cashews, dessicated coconut, and almonds.

Pomegranate filled with mother milk (For Infants)

Ingredients:

Pomegranate shell	one
Mother milk	To fill
Naushadar	1Pinch

Method:

i. Remove the seeds from inside of pomegranate.

ii. Add milk and pinch of *naushadar*.

iii. Seal the pomegranate hole with wheat flour dough properly.

iv. Heat it on coal and serve the milk to infants.

Parshad (For lactating women)

Ingredients:

Wheat flour	50g
Desi ghee	50g
Jaggery	50g

Method:

i. Roast wheat flour or *besan* in *desi ghee* in heavy bottom *karahi*.
ii. Boil the water and mix jaggery in it properly.
iii. Cook till it leaves sides of *karahi and* add jaggery water into roasted wheat flour and.
iv. Serve warm.

Suhaga (Borax) with honey

Ingredients:

Suhaga	1Pinch
Honey	1tsp

Method:

i. Mix *suhaga* and honey properly.

Sund, harar and *majuphal*

Ingredients:

Dry ginger powder (*Sund*)	1tsp
Harar	one
Majjuphal	one

Methods

i. Make powder of all the ingredients and serve with milk.

Sund and black pepper powder

Ingredients:

Dry ginger powder (*Sund*)	2Tbsp
Black pepper (*Kalli mirch*)	2Tbsp

Method:

i. Grind the black pepper in powder form, and mix well with *sund*.
ii. Serve ½ tbsp with hot milk.

Smauni (for lactating women)

Ingredients:

Jaggery	250g
Carom seeds (*Ajwain)*	1Tbsp
Water	100ml

Method:

i. Heat water and jaggery together until it boils.

ii. Carom seeds are rubbed between the hands and sprinkled on it.

Sund (for lactating women)

Ingredients:

Dry ginger powder (*Sund*)	100g
Jaggery	200g
Desi ghee	100g

Method:

i. Dry roast the *sund*.

ii. Take ghee and roast the *sund* till it becomes reddish in color.

iii. Add jaggery and stir until mixed properly and serve warm.

Sund panjeeri

Ingredients:

Dry ginger powder (*Sund*)	150g
Wheat flour	½Kg
Besan	½Kg
Jaggery	½Kg
Almonds	100g
Cashews	100g
Carom seeds (*Ajwain*)	50g
Desi ghee	1/2kg

Method:

i. Roast *besan* and when half roasted, add wheat flour properly in a heavy bottom *karahi*.

ii. Add dry ginger powder and carom seeds.

iii. Add chopped almonds and cashews.

iv. Add jaggery after switching off the flame in hot mixture and mix well.

Till* (Sesame seeds) *di pinni

Ingredients:

Sesame seed (Till)	250g
Jaggery	250g
Desi ghee	250g

Method:

i. Take a pan and heat *desi ghee*.
ii. Add jaggery and make a thick jaggery syrup.
iii. Add sesame seeds and mix well.
iv. Cool it down and make *Pinnis*.

Triphala

Ingredients:

Amla	150g
Bahera	100g
Harar	50g

Method:

i. Sun dry *harar, amla* and *bahera*.
ii. Remove seeds from *harar and bahera*.
iii. After drying grind them and make powder.
iv. Mix the powders thoroughly.
v. Serve with hot milk during bed time.

Thandai

Ingredients:

Almonds	30g	Melon seeds (*Magaj*)	20g
Black pepper (*Kalli mirch*)	1-2	Cardamom	3-4
Khas khas	20g	Milk	1cup
Wheat	150g	Sugar	30g

Method:

i. Roast wheat and make flour.
ii. Soak all the dry fruit overnight in water separately.
iii. Grind all the dry fruit separately and make paste out of them.
iv. Mix wheat flour and paste in hot milk and serve.

Tumme di panjeeri

Ingredients:

Bitter apple (*Tumme*)	1 Kg
Besan	500g
Wheat flour	500 g
Shakar (powdered jaggery)	1kg
Desi ghee	1kg

Method:

i. Peel and chop bitter apple in small pieces and remove seeds.
ii. Take *ghee* and roast *besan* for 15 minutes and then add wheat flour and roast it.
iii. Add bitter apple and cook for 10-15 minutes.
iv. Remove from flame and mix powdered jaggery.

VITA

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