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A BRIEF ANALYSIS ON ETHNIC NUTRITIOUS FOODS OF UTTARAKHAND GARHWAL HIMALAYAN REGIONS AND THEIR MEDICINAL IMPORTANCE

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ABSTRACT

The Himalayan mountain range in India is home to some of the most diverse ethnic communities and tribes, especially in the northwestern Himalayan range, which spans between the Indian provinces/states of Uttarakhand. The rich and diversity of the local flora offers nutritional diversity and ensures therapeutic certainty for the local communities (e.g., Garhwali, Kumaoni, Bhotiya, Jaunsari, Gaddi, and Kinnauri). The local varieties of millet, legumes, leafy vegetables, tubers, and ferns in different forms (fresh, sundried, flour, pickled, or fermented) are commonly used to prepare different dishes and locally produced beverages (e.g., soor/sur, pakhoi/paakuyi, chhang, jann/jan, jhol, lugdi/lugri, etc.). Garhwal Himalaya is rich in its cultural diversity since ancient time. Types of food grains and the recipes used in common and in particular during specific occasions is an important aspect of culture of Garhwal Himalayan folk. Though an enormous number of plant species, which are identified as food and medicines by the folk, are naturally available or are grown in this soil, some very specific food items (Ragi, Amranthur, Ogal, Jwar, Maize, Rajma, Gahat, Bhatt, Urd, Suntha, Lobihiya, Moong, Til, Bhang jeera, Jau, Red Rice, etc.), their specific recipes, and medicinal value is discussed in the paper. Recipes prepared during different cultural ceremonies or festivals out of these food items are also discussed. The objective of this study is to provide information about the food nutrients of uttarakhand garhwal and their medicinal importance.

KEYWORDS: Uttarakhand, Garhwal Himalaya, Ethnic Food, Recipes, Food values, Medicinal Values.

INTRODUCTION

One of the highest ecosystems in the world is located in the Himalayan region of India, which extends 3500 km from Jammu and Kashmir to Arunachal Pradesh in the northeastern part of the country. The snow-covered Himalayas are geographically divided into three regions: Eastern Himalayas, which include eastern Sikkim, Arunachal Pradesh, Nepal, the Darjeeling Hills, states of north-east India, the Tibet Autonomous Region (TAR), and Bhutan; the Central Himalayas, which include central and western Nepal and TAR; and the Western Himalayas, which include Himachal Pradesh, Uttarakhand, Jammu and Kashmir, and Ladakh (Fig. 1). Traditional inhabit- ants of these biodiversity-rich areas know the properties of herbs, vegetables, fruits, and animals, the operation of ecosystems, and techniques for using and managing them. As a result, they make a balanced use of various resources, including wood, fodder, fiber, and medicinal and edible plants.[1]

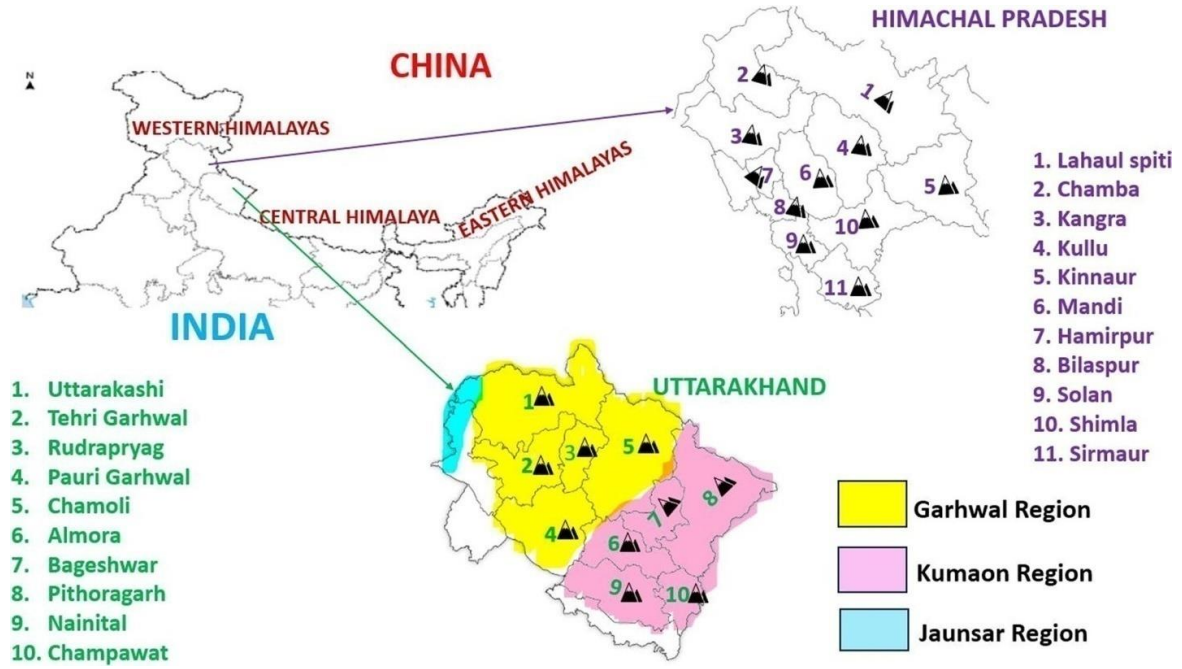

Fig. 1: Indian Himalayan range, including western, central, and eastern Himalayan planes (in purple). The Western Himalayas are located in Himachal Pradesh and Uttarakhand states

Garhwal Himalaya is rich in its cultural diversity since ages. Food being an important constituent of the culture is analysed here in view of its importance as availability, diverse recipe, nutritional and medicinal value and also its specific use during cultural ceremonies and religious functions.[2] The people acquired knowledge of these food sources through ancient literature, manuscripts and experiences. Apart from its value as food, the folk also identified various plant sources as fodder, fibre, writing ink, useful cloth washers, tooth brusher, oilseeds and aromatic, etc. The knowledge of medicinal plants and their uses was first mentioned in Rigveda. Charak Samhita is a reservoir of this knowledge from where it was transcribed in various manuscripts written by the laureates of that time. Later it was converted in to a system of therapy known as Ayurvedic system of medicine.[3]

India is the second largest populated country on the earth. Ever-increasing population is leading to shortage of resources. Millions of people in many developing countries are struggling hard even to meet their basic food requirement. Today, the most plant based human food depends on limited number of crops. The contribution of wild edibles cannot be ignored in any part of the world. Most rural inhabitants in India depend on thenaturally available wild

plant species to meet their food requirements as these species are enormous in nature and have a good nutritional value. In some of the wild edibles the nutritional value is much higher than several known common vegetables and fruits.[4]

Indian subcontinent is having an affluent culture with all the three levels of biodiversity. Uttarakhand, which is known as Devbhoomi (Land of Gods) of India, is geographically distinguished into the Garhwal and Kumaun region and is endowed with rich biodiversity including medicinal, aromatic and spice plant species due to specific climate and geography. The anthropogenic literature indicates a large number of ethnic group inhabiting the region since long past as well as some recently migrated population. Amongst inhabitants distinct caste creeds culture and traditions existed from distinct past. Collectively all the people of hills are known as "paharis" and specific to Garhwal region as "Garhwalis". The present work is an attempt to document the traditional wild edibles consumed by the folk of the Garhwal region.[5]

Objective of the study

The chief objective of the present study is to bring light to the facts based on historical, cultural, and folk beliefs related to the traditional food and beverage of the uttarakhand Garhwal Himalayan regions.

METHODOLOGY

Study design: Prospective observational study.

Study Site: The study was conducted in villages under Pokhra block of Pauri Garhwal, Uttarakhand.

Study Duration: The study duration was 6 months.

Study Criteria

- ***Inclusion Criteria***

Discussion on traditional nutritious food and health benefits with all the elderly people living in villages.

- ***Exclusion Criteria***

We did not include people below 45 years of age in our study.

Source of Data

Visited villages of Pokhra block of Pauri Garhwal district of Uttarakhand and collected information about traditional nutritional foods and their health benefits.

Data Collection

After obtaining informed consent study data was collected in a format containing peoples demographics as well as nutritional information (Appendix-I).

Study Procedure

Ethno-botanical survey on the use of plants as food and traditional medicines was conducted in Garhwal region using various approaches viz, pre-structured questionnaire interview and observation method. A structured dialogue with elderly people and Local Vaidyas was done for their knowledge about the traditional agricultural crops, practices and their benefits. The local and wild crops of medicinal relevance were collected from the adjoining forests in all seasons. Some scientific medicinal food or chemical composition values were correlated by reviews of literature. The plant

specimens were identified and confirmed taking help of the taxonomists of Maharaja Agrasen Himalayan Garhwal University, Pokhra, Pauri Garhwal-246169, Uttarakhand, India.

RESULTS AND DISCUSSIONS

Food is an important aspect of culture which is also true for the peoples of mountain region in Garhwal Himalaya. Though an enormous number of plant species grow in this soil which are identified as food and medicines by the folk, a few of them are discussed in this paper that are specific to Garhwal region. Some of the nutritionally rich crops are Ragi (Mandwa), Amranthur, Ogal, Jwar, Maize, Rajma, Gahat,Bhatt, Urd, Suntha, Lobhiya, Moong, Til, Bhangjeera, Jau, Red Rice etc (Fig Plate 1). These traditional crops have deep connections with the cultural history of Garhwal region. Every crop has its own specific traditional recipes and significance. Some of these crops arecultivated in field while some grow in wild. These are rich source of minerals, vitamins and also have a medicinal relevance that helps in enriching the immunity also. Some important ethnic food of Garhwal folk are discussed here:

- ***Oryza sativa:*** **Family-Poaceae; Commonname - Laal Chawal / Laal Chaal**

Most commonly used cereal in Uttarakhand is rice or Chawal. The term rice is derived from Tamil word "Arisi" andis commonly known as 'Dhan' in Hindi or 'Vrihi' in Sanskrit.[6] It forms the basic economic activity for about 150 million rural households inIndia. Ancient Indian literature "Charaka Sahita", authored by great Charaka mentioned rice with red husk and grain as the best which is efficacious and subdues the disease. Red rice, commonly used in Garhwal Region, is rich source of carbohydrate, protein, fat, iron andzinc. It is deeply knitted with traditional rituals and used in various folk dishes and snacks. The starch extracted from boiled rice is given to pregnant ladies and lactating mothers due to its caloric value. It is used to make biryani (khichadi), Metha Bhaat (Cooked in water with Gur/Jaggery) and Kheer. Red rice flour is cooked with jaggery to make traditional sweet of Garhwal known as "Arsa" which is a very specific sweet items prepared during wedding ceremony.[7] Gangadharan et.al., (2018) reportedthat the land races of red rice possess higher nutraceutical properties than the other varieties,in the term of carbohydrate, protein, fibers, fat, iron and zinc composition.[8] According to Se et.al. (2016) the red rice has low glycemic index and have high antioxidant level.[9]

- ***Echinochloa frumentacea*; Family-Poaceae; Common name- Jhangora**

Jhangora *(Echinochloa frumetacea),* a traditional dish of Garhwali folk which is also known as Indian barnyard millet is not only used as basic food item but is also used as specific dish during fasting and so is referred to as "Vrat ke chawal" in Hindi.[10] These arealso known as 'Shymaka' in Sanskrit. This is very important millet crop of the mountain region with growing demand in market because of its medico- nutritional significance. It is used as an alternative ofrice by the patients of sugar, gastric etc. It is used to make various dish needs like Kheer and Chhachinda (cooked Jhangora with butter milk). Chhachinda is very useful in Jaundice as it has low carbohydrate content and slowly digestible. According to Veena et.al.(2002), the Barnyard millet is a natural designer food. The millet has also been used to develop various by-products such as biscuits, sweets, noodles, rusk, etc.[11] They are gluten free grains and hence can be consumed by everyone.[12]

Fig. 2: Traditional functional foods of Uttarakhand; these functional foods are mainly prepared using different locally grown pulses, vegetables, herbs, spices, and starter cultures. Pulse-based dishes such as Bhatt dubke, Chudkani, Kafli, Badi, and Ghath dal are particularly protein-rich.

➢ ***Eleusine coracana* (L.); Family –Poaceae; Common name – Koodu or Mandwa**

Ragi is known as Koodu or Mundwa in the mountainous area of Northern India. Also referred as 'Rajika' in sanskrit and 'finger millet'in English. This plant is of great cultural and geographical significance. The seed is highly nutritional and of great medicinal value.[12] It is source of calcium, Iron, protein and vitamins for the poor as it is easily available. It is mixed with wheat flour to make chapatis that are preferably consumed with Ghee, Gur or mixed salt. It is mixed with warm to make "Baadi" which is easily digestible for elderly persons. Bread soup, pudding mixed with finger millet flour and wheat flour is beneficial for preventing diabetes, anaemia, gastric, constipation, migraine and osteoporosis.[13]

➢ **Hordeum valgare L.; Family-Poaceae; Common name -Jau**

In Sanskrit is known as 'Yava'. The powdered flour of Jau is mixed with wheat to make chapatis. It is also used as fodder for the livestock to increase milk yield. This is found useful in treatment of diabetes and eye disease. "Jau" has also an important religious value as these are offered during prayer to God along with till (*Sesamum indicum*).[14]

➢ ***Glycine max* (L.) Merr. Family -Papilionaceae; Common name- Kala Bhatt**

Kala Bhatt is a variety of *Glycine max* and rich source of protein in the mountain. In combination with few other pulses it is used to make Dal. The seed of Kala Bhatt are roasted to Chutney. The aroma of the roasted seeds is gives relief during cold. Black soybean, a variety of *Glycine max* is cultivated as a food crop in the Garhwal region. The black bean is an important crop because of it high nutritional and medicinal value. The seeds are rich source of vegetableprotein and fat.[15] They are cholesterol-free, but contain linolenic acid, which has been found to prevent heart disease. Soybean contains isoflavonoids such as genistein and daidzein that have been found to have antioxidant,

antitumor, and estrogenic activity. In India, the seed meal obtained after oil extraction is available in plenty, and is commonly marketed as Nutri-Nuggets.[16]

- ***Macrotylome uniflorum* (Lan.); Family - Fabaceae; Common name -Gahot**

Horse gram in one of the highly nutritious vegetable pulse crop of warm efficacy. It is commonly known as Kulattha (Sanskrit) and Gahot (Garhwali). It is delicious and is having great medicinal relevance.[17] It is given to patients of kidney stone. Regular consumption of the same helps in the breaking of stones. Apart from being a potential source of protein it is also recognized as an excellent source of iron, molybdenum and Calcium.[18]

- ***Vigna mungo*; Family- Fabaceae; Commonname- Urd**

Vigna mungo is commonly known as Masha in Sanskrit, Black Gram in English and Urad dal in Hindi. This bean is heavy to digest and increases the moistness of body tissue. It is sweet to taste and hot in potency.

It is visualised that consumption of this bean increases kapha and pitta which causes many diseases and human health problems. It has somebeneficial properties like enhancing milk secretion in lactating mothers and increases bodyweight and energy level. Urd has a warm efficacy with high consumptions in the mountainous region.[19] Though urad dal is a very common dish in mountain region but It is specifically consumed as “Chainsa” which is prepared by making it in powder form as then it becomes easily digestible. It is rich source ofcalcium and is also used in plaster for fractured bones. The paste of Urd dal is used in making “Pakode” etc. on various religious occasions and birth day, marriages and functions.[20]

- ***Dioscorea bulbifer*a L.; Family-Dioscoreaceae; Common name- Genthi**

Genthi is commonly known as wild Yam in English and Barahi in Sanskrit. It is a tuber climber vegetable that is commonly found in wild. The tubers are boiled in warm water. This vegetable is given to diabetic patients as its Regular use helps in lowering the sugar level. It also helps in the gastric problem. It is highly nutritious vegetable consumed mainly during winters and is useful in leprosy, asthma, cough, typhoid, tuberculosis, kidney dysfunction, contraceptive, constipation, indigestion, abdominal pain, dysentery[21], sore throat, wounds boils and cut, etc. Its tubers are roasted and cooked as vegetable. Tubers are also used for the treatment of purgative, aphrodisiac, rejuvenating and tonic anti-helmenthic, worm infestation, and general debility. It is also used in disease of lungs, spleen, diarrhoea, improving digestion andmetabolism.[22]

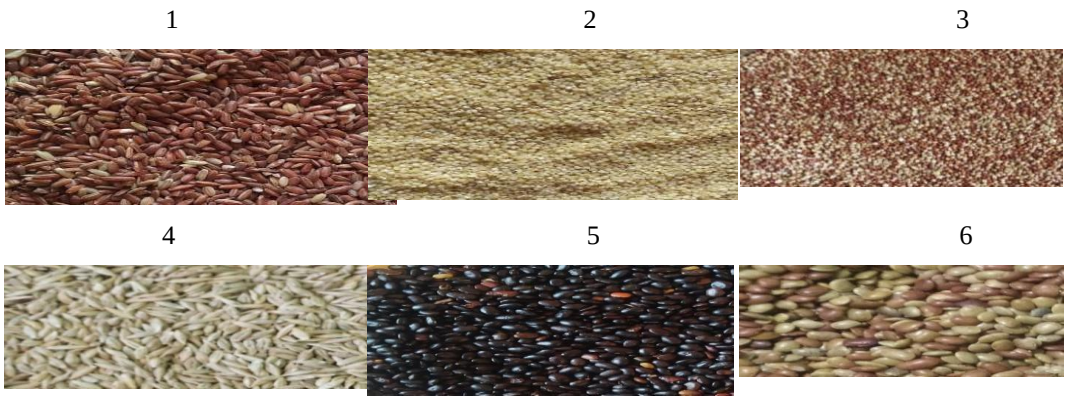

Fig Plate 3: Ethnic Food of the Garhwal Himalayan Folk. 1. Oryza sativa (Laal Chawal); 2. Echinochloa frumentacea (Jhangora); 3. *Eleusine coracana* (Koodu or Mandwa); 4. *Hordeum valgare* (Jau). 5. Glycine max (Kala Bhatt); 6. *Macrotylome uniflorum* (Gahot); 7. Vigna mungo (Urd); 8. Dioscorea bulbifera (Genthi); 9. *Urtica dioica* (Kandalee); 10. *Raphanus sativus* (Muli), 11. *Ficus auriculata* (Temla); 12. Adhatoda Vasica (Baisiga or Baisingu); *13. Celosia argentea* (Gadria); 14. *Cannabis sativa* (Bhang); 15. *Perilla frutescens* (Bhangjeera); 16. *Aegle marmelos* (Belpatri); 17. *Ocimum gratissimum* (Ram tulsi); 18. Allium stracheyi (Faran); 19. *Angelica glauca* (Choru).

➢ ***Urtica dioica* L.; Family-Urticaceae; Common name - Kandalee**

In Garhwal folk language it is called kandalee. This is a under shrub of commonly occurrence in mountain region. It is of warm efficacy. The delicate branches leaves are eaten as vegetable during November to February months. It is also given to live stock for increasing milk quality. According to several authors (Tiwari et.al., 2010), the leaves and stems of this plant contain needle that injects several chemical including acetyl choline. Stem and leaves are applied externally for treating body cramps.[23]

➢ ***Raphanus sativus*** **Linn; Family –Brassicaceae; Common name – Muli**

It is commonly known as 'Radish' in English and 'Mulaka' in Sanskrit. Radish green leaves are rich source of Iron, vitamin c, calcium. The roots are rich source of calcium and its juice is highly beneficial in colic pain. The juice of radish greenleaf is highly recommended in treatment of Jaundice. Regular consumption of the fresh leaves of juice of leaves helps in recovery of damaged liver by local old peoples. It is used as vegetable salad.[24]

➢ ***Ficus auriculata*****; Family- Moraceae;Common name - Temla**

It is commonly known as 'Udumber' in Sanskrit and 'Tirmul' in Hindi. It is a common tree found in mountain region. It fruits twice in a year. The fruits are roasted in mustard oil to make delicious vegetable. The ripe fruits are sweet in tastes and consumed raw. It is also useful in the gastric troubles.[25] Combination of root powder of *Ficus auriculata* and bark of *Oroxylum indicum* is taken in Jaundice. Ethnic people in Kharagchari hill district use *F. auriculata* as food and medicinal plant. The paste of leaves is applied on the wound for curing. Phytochemical screenings of F. auriculata leaf and fruit extract were evaluated which showed the presence of phenols, flavonoids, glycosides, resins, tannins. Alkanoids are absent.[26]

➢ ***Adhatoda Vasica*****; Family-Acanthaceae; Common name – Baisiga or Baisingu**

Adhantoda zeylanica Medic. Syn *A. vasica* (Linn) and *Justicia adhatoda* (Linn) are commonly known as Malabur nut (English), Basinga in Garhwali and Vasika in Sanskrit. It is shrubby plant commonly visible during winter season. The delicate buds in its terminal plants are used for making vegetable. Before cooking the buds are left in water for 12-14 hours and then it washed properly to remove all bitterness. Decoction of Buds and leaf are given to diabetes patients and are also useful in fever. *A. vasica* is rich in essential oils, fats, resins, sugar, gum,amino acid, protein and Vitamin C. The plant leaves are said to contain phenols, tannins, alkenoids, anthraquinone, saponins and flavonoids, and reducing sugars.[27]

➢ ***Celosia argentea*****; Family- Amaranthaceae;Common name- Gadria**

It is commonly known as 'Sarwari' in Hindi,'Vitunna' in Sanskrit and 'Quail Grass' in English. Gadrai is can use as a green vegetable that grows in the wild, mostly nearly water bodies. It is rich source of Iron and vitamins. It is mostly found in stream banks of hill-streams. Its leaves are cooked as vegetables in Garhwal region. *Celosia argentea* mostly found in winter season.[28]

➢ ***Cannabis sativa*****; Family- Cannabaceae; Common name – Bhang**

It is commonly known as 'Bhanga or Vijaya' in Sanskrit, 'True Hemp' in English. This is also shrubby plant that grows in wild. The seeds are used as Condiments. It is also used in making Chutney and "Crunchy Pakode". Seeds are used as spices and condiment. The seeds are used to make chutney. It is used in treatment of Cancerous ulcers, Tumors, diabetics, Epilepsy, gonorrhea.[29]

➢ ***Perilla frutescens*** **(L.); Family –Lamiaceae; Common name -Bhangjeera**

It is commonly known as 'Bhanijira' in Hindi and 'Perilla' in English. Bhang Jeera is a commonly occurring wild and domesticated shrub in the mountain. The seeds are of great medicinal value. The oil of seeds is used for baby massage during winters. The seeds are also used as spices and pasted as tasty sauce. The roasted seeds along with the flattened rice and sugar are locally known as "Bhukna" are consumed by localities during winter.[30] Locally the plant is used for various purpose i.e as a medicine, edible oil, flavoring agent, as vegetable and other traditional food item. The roosted

seeds are also useful in treating colds, cough, chest stuffiness, vomiting, abdominal pain, and constipation. Conventionally the seed oil is used as edible oil for centuries by local people and also used for massaging new born infants. The seed oil is used as a fuel, a drying oil, or cooking oil; the leaves are used as potherb, for medicine, or for flavouring.[31]

- ***Aegle marmelos* (L) ; Family – CorreaRutacea; Common name – Belpatri**

It is commonly known as 'Bel' in Hindi, 'Mahaphal' in Sanskrit and 'Bael tree' in English. This is wild edible fruit tree of medicinal and religious importance. The leaves of the tree (belpatra) are used in worship of Lord Shiva. The fruit juice is good for gastric problem. Regular consumption of juice helps in keeping bowel system healthy. It is also consumed inform of candy and murraba. Grounded fresh leaves to paste with 5-7 *Piper nigrum* and taken orally with water in early morning for curingdiabetes, Peptic ulcer, diarrhea, constipation and jaundice.[32]

- ***Ocimum gratissimum* L.; Family-Lamiaceae; Common name- Ram tulsi**

It is commonly known as 'Vridhu tulsi or Phaninjhak' in Sanskrit, 'Tulsi' in Hindi and 'Shrubby Basil' in English. Mostly Ram tulsiused in Garhwal region in a form of dry power (flower, seed, steam and leafs) in black tea and another used with in milk in winter season. *Ocimum gratissimum* is used as a spice and possesses nutritive value. Studies have provedthat dry leaves have better disease preventive properties in comparison to fresh leaves. In India, the plant has a wide folklore medicinal importance and is used in treating diarrhea, headache, fever, pneumonia (Prabhu et.al, 2009). In South Asia, the whole plant is used in treating, Sunstroke, headache, stomache and influenza. Seeds are used against gonorrhea. The leaves are also used as a constituent of green tea.[33]

- ***Allium stracheyi*; Family-Amaryllidaceae; Common name – Faran/Jamboo**

It is locally known as 'Jamboo' in Hindi and 'Faran' in Garhwal region. Generally it is used in pickles and treating some health problems. Traditionally *Allium* spp. has used as a spice by Bhotia tribal communities. *Allium stracheyi* and *Allium wallichii* with some other species are grown widely in Tibet and its adjoining borders in Uttarkashi and Pithoragarh District. *Faran* is also said to contain sulphur rich compound with anti-oxidant, anti-inflammatory and anti-microbial properties which reduces the blood cholesterol.[34]

- **Angelica glauca; Family- Apiaceae; Common name - Choru**

In trade, it is called 'choru', 'Gandrayan' and Himalayan Angelica. It is commonly known as Choru in Garhwal region and Gandrayan in Kumaon area. In literature, it is cited as smooth *Angelica* (Chorak in Sanskrit) and Tsar on (in Tibet). Angelica is used as a cough syrup. 2-3 whole angelica roots are boiled in quart of water to which honey is added to make it a syrup consistency. Choru roots are given with fodder toimprove lactation in cattle.[35]

Traditional food crops forms a significant portionof dietary diversity of farmer households of Uttarakhand hills. These foods are associated with the culture and traditional customs and festivals of the region. As Uttarakhand has a strong food culture, traditional food systems can persist and wild foods are still prevalent enough. These crops and practice help in improving local food security in a sustainable manner. These crops are rich in many important nutrients and resilient to disease and droughts etc. The traditional practice of using these crops as mixed cropping provided protection against total crop failure. It is well recognized fact that wild species and intra species biodiversity have a key role in nutrition security. These crops plays an imperative role in rural areas, and apart from their food value these are still being used as household remedies for different ailments.[36]

Table 1: Traditional Food of Uttarakhand hills Garhwal juansar and Kumaon regions (Roti traditional flat bread).

Traditional Food of Uttarakhand hills Garhwal juansar and Kumaon regions (Roti traditional flat bread)				
FOOD NAME	**REGION**	**KEY INGREDIENTS**	**HEALTH BENIFITS**	**REFERENCE**
Maas/ Urad chaise	Garhwal	Black gram	Prebiotic, rich in protine	[1]
Kandali saag	Garhwal	Urtica sp. twigs, jakhya (dog mustard seed). Asafetida, and garlic	Anti-stress, stamina enhancing, immunity booster; used to treat cough and cold	[12,13]
Jhangora curry	Garhwal	Jhangora (E.frumentacea) Cooked with buttermilk	Antioxidants, minerals, flavonoids; contains fiber and crude protein; gluten-free treats bi, constipation, diabetes and obesity	
Badi	Garhwal/ Kumaon	Bottle gourd (*Lagenaria siceraria*), cucumber (*Cucumis sativus*) green gram (Vigna radiate). and Black gram (*Vigna moongo)*	Flavonoids; also contain potassium magnesium, fibers, and vitamin improves digestion	[22]
Mandua roti	Garhwal/ Kumaon	E.coracana (*finger millet*) flour	Stamina enhancing, immunity booster antidiabetic, anti-obesity; also helpful in curing sinsues and severe cold	[1.12]
Bhatt dubake / Chudkani	Kumaon	Bhatt (a local variety of black soyabeen) Bhatt and rice flour	Vitamin A & B protein, Iron, phosphorus, Calcium, carbohydrate, Anthocyanins, and oleic, linoleic and linolenic acid immunity Booster, antifatigue, anti-obesity	[1.24.36]
Jay (salted tea)	Kumaon (Bhotiya community)	Bark of taxes baccata, milk salt	Antioxidant activity	[26]
Kadiyiek Lembda	Jaunsar – Bawar Jaunsar – Bawar	Finger millets, barley , and stone guard Amaranth seeds, ghee, milk, butter, and salt	Stregthens bones Immunity booster, provides strength	[35]

CONCLUSION

The western Himalayan region (Uttarakhand) of India is home to different ethnic groups and tribes. Along with their distinct ethnicity and culture, this region offers diversified food and culinary habits. The local vegetable and grains (mandua, jhangora, makka, bhang seed, etc.) are the core of local dishes, which have numerous health benefits such anti-obesity, antidiabetic, and protects against the kidney diseases and cardiovascular diseases. These benefits are attributed to their higher level of micronutrients (vitamins and minerals), dietary fiber (prebiotics), antioxidants, and polyphenols. Other than grains and vegetables, locally produced fermented beverages are also beneficial for the gut health, as they enrich the gut health and provide the different probiotics (*Lactobacillus* sp. and *Bacillus* sp.). Besides its nutritional values, the local food also reflects a vibrant variation based on ethnicity and region, which needs to be preserved for future generations and therefore documented.

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CONFLICT OF INTEREST

The author declares that there are no conflicts of interest.

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