



## Documentation of traditional alcoholic beverages and their indigenous utilization pattern by Kinnaura tribes of Himachal Pradesh, North Western Himalaya

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Traditional alcoholic beverages are part and parcel of indigenous communities worldwide since ancient ages. These beverages are very common and popular among the indigenous communities residing in rural and tribal areas of India. In view of this, The present study has been conducted to document the traditional alcoholic beverages and their indigenous uses by Kinnaura tribes of Himachal Pradesh. Kinnaura, the tribal communities of Kinnaur district, Himachal Pradesh are famous for their own unique traditions, culture, history and lifestyle. The usage of local alcoholic beverages especially *Angoori*, *Moori*, *Rashi*, *Brandi*, *Shudang*, *Chhang* and *Zanashang* are quite common among Kinnaura tribes. These are important part of their customary rituals, festivals, diet and health since time immemorial and prepared by the tribal communities in every village across the Kinnaur district for their own use by following indigenous methods using fruits, grains and bulbs of 15 locally available species. The information on collection time, processing and production was gathered through interviews. Production of these traditional beverages are limited to household level and the methods involved for their preparation are almost similar all across the Kinnaur district. These indigenous practices are also being followed by the present generations through the knowledge gained from their elders. Legal permission for mass production, branding and popularization of traditional beverages and adoption as livelihood option has been suggested.

**Keywords:** Angoori, Chhang, Indigenous utilization, Himachal Pradesh, Kinnaura tribe, Moori, Rashi, Traditional alcoholic beverages

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A wide variety of traditional alcoholic beverages are used throughout the world. Based on the cultural, social and economic importance, these traditional alcoholic beverages are included in 'unrecorded alcohol'. It has been estimated that approximately 25% of all the alcohol consumed worldwide, is drunk in the form of unrecorded alcohol<sup>1</sup>. At present, 5000 diverse fermented foods are consumed by diverse communities living worldwide, many of which are indigenous and manufactured in small quantity to meet the requirements of local communities of a specific area<sup>2</sup>. Fermentation is the oldest known form of food biotechnology, which has been practiced for thousands of years by the ancient man as the potent tool for preserving food and beverages<sup>3</sup>. In India, fermented food and beverages are fundamental part of ethnic heritage since ages and the traditional fermented food preparation is one of the oldest and cost effective bio-technological processes<sup>4</sup>. These fermented foods are also reported to enhance the nutritional quality of any product by enhancing the

amount of vitamins and protein solubility<sup>5</sup>. Fermentation involves the activity of microorganisms and the most commonly found microorganisms are lactic acid bacteria which grow rapidly in most of the food substrates<sup>6</sup>. Traditional beverages have different forms which vary from crystal-clear products to turbid liquid or thick gruels and pastes<sup>7</sup>.

In Indonesia *Coffea* sp., *Caesalpinia sappan*, *Oryza sativa* var. *glutinosa*, *Arenga pinnata* and *Gyrinops versteegii* are commonly used for the preparation of different types of traditional drinks which are consumed as functional drinks by Sasak tribes for health benefits<sup>8</sup>. India has the second largest tribal community in the world and most of the tribals in India live in the hilly stretch of the Himalayan range from Ladakh or Utrakhhand to Arunachal Pradesh. Preparation of various fermented foods is intimately associated with their customs and rituals<sup>9</sup>. These tribal communities widely consume wines obtained from toddy, jackfruit and fenny manufactured from coconut palm (*Cocos nucifera* L.),

jackfruit (*Artocarpus heterophyllus* Lam.) and cashew (*Anacardium occidentale* L.), respectively<sup>10</sup>. Some popular alcoholic beverages of North East India are *Apong* and *Enong* in Arunachal Pradesh and *Bhaati* and *Jaanr* prepared by Gorkha tribe<sup>11</sup>. Rice beer is a traditional alcoholic beverage prepared and consumed by all ethnic tribes of North-east India. *Artocarpus heterophyllus*, *Centella asiatica*, *Piper* sp. and *Solanum* sp. are the most common plants used in preparation of rice beer. Rice beer and its preparation are well mingled with the culture and indigenous health care system<sup>12</sup>. A number of traditional foods are prepared and consumed by people in Himachal Pradesh for centuries and these form a part of socio-cultural life of the hill communities. However, the preparation of indigenous or traditional foods and beverages remains as a household art today<sup>13</sup>. Bhatouru, Sidu, Chilra, Manna, Aenkadu, Sepubari, Patande, Baari, Babroo, Bedvin roti, Madhra, Malpude, Churpa, Sura, Chaang, Angoori, Lugdi and Chukh made from different fruits, vegetables, cereals and milk products are the popular traditional food items that are unique and very popular among the tribal and rural communities across Himachal Pradesh<sup>14</sup>. Some of the fruits and cereals based indigenous beverages are also extensively consumed by the tribal communities of Kinnaur, Himachal

Pradesh. Productions of these traditional beverages are restricted only to household and community levels and their preparation is done by following age old traditional methods using simple traditional equipment's. The review of literature revealed that studies on indigenous beverages of the tribal communities of Kinnaur district have not been carried out so far. Therefore, an effort has been made to; document the species used for the preparation of alcoholic beverages; methods used for the indigenous preparation of traditional alcoholic beverages and indigenous utilization by tribal communities.

### Study area

Kinnaur, 31° 55'50'' and 32° 05'15'' North latitudes and 77° 45'00'' and 79° 00'35'' East longitudes one of the tribal districts of Himachal Pradesh, lies on both banks of river Sutlej (Fig. 1). The entire district is administratively divided in to five Tehsils viz., Kalpa, Sangla, Nichar, Morang, Pooh. Due to its unique and tough topographical features the entire district has dry temperate climate with long winter season extending from November to April with heavy snowfall during the months and a short summer from May to June. The main soil types of the region are sandy, sandy loam, clayey loam, gravel, etc. Three forest types' viz., moist zone, dry zone and arid zone forests are

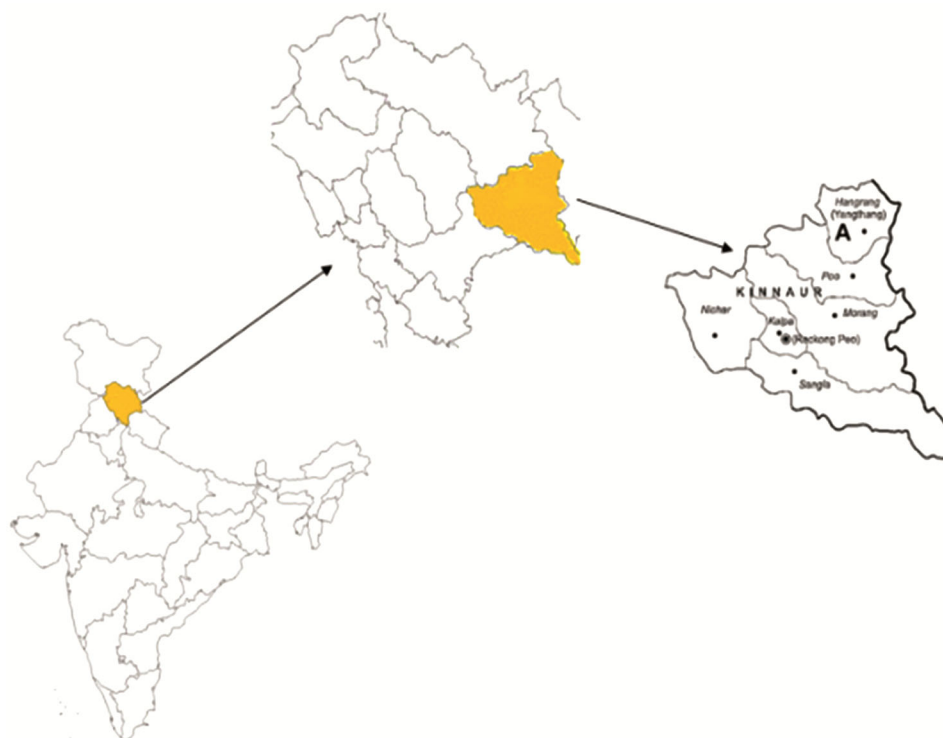


Fig. 1 — Location of district Kinnaur in Himachal Pradesh and India

found in district Kinnaur. Main tree species of the region are *Cedrus deodara*, *Pinus wallichiana*, *Picea smithiana*, *Pinus gerardiana*, *Abies pindrow*, *Abies spectabilis*, *Quercus semecarpifolia*, *Quercus ilex* and *Juniperus polycarpus*.

### Methodology

The present study is based on extensive and intensive surveys conducted from 2017 to 2019 in the representative 20 tribal villages/panchayats namely Rarang, Rispa, Ribba, Jangi, Thangi, Lippa, Morang, Nesang, Pangi, Barang, Sunnum, Kilba, Chhitkul, Rakchham, Chagaon, Kalpa, Kamru, Sungra, Bari and Yangpa of Kinnaur district in Himachal Pradesh.

From each village, 2-5 knowledgeable persons were interviewed and list of locals interviewed are given in Table 1. The informants included men, women, youths and elders between the age of 32 to 68 years. Most of them were dependent on agriculture and horticulture for their livelihood. These local knowledgeable persons were interviewed through semi-structured questionnaire. The questions were mainly for the information generation on species used for the preparation of beverages, collection time, processing, distillation, market values, uses, cultural values, etc. For information generation, questions related to the beverages were asked in local dialect and Hindi as well. The species were used singly or in

Table 1 — List of Kinnaura tribal people interviewed in Kinnaur district of Himachal Pradesh

S.No	Names	Age	Sex	Panchayats/ Village	Types of beverages prepared
1.	Tharchen Mani	65	F	Rarang	Chul Rak, Seo Rak & Dhakhang Rak
2.	Shyam Lal	59	M	Rarang	Chul Rak, Seo Rak & Nahpoti Rak
3.	Shamsher Singh	57	M	Rarang	Chul Rak & Seo Rak
4.	Gulab Zin	65	M	Rarang	Chul Rak, Seo Rak & Dhakhang Rak
5.	Pradeep Kumar	39	M	Rispa	Chul Rak, Seo Rak, Regu Rak & Guram Rak
6.	Vidya Ram	55	M	Rispa	Chul Rak, Seo Rak, Regu Rak & Naspoti Rak
7.	Sudesh Kumari	40	F	Rispa	Chul Rak, Seo Rak, Regu Rak & Naspoti Rak
8.	Durga vati	49	F	Rispa	Chul Rak, Seo Rak, Regu Rak, Guram Rak & Dhakang Rak
9.	Subhashini	67	M	Ribba	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak, Luccha Rak, Aadu Rak, Palumu Rak, Angoori, Dakhang Rak & Mixed fruit Rak
10.	Khushal Singh	55	M	Ribba	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak, Luccha Rak, Palumu Rak, Mixed Fruit Rak, Angoori, Dakhang Rak & Japani Pholangu Rak
11.	Promila Devi	65	F	Ribba	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak, Mixed fruit Rak, Regu Rak, Luccha Rak & Palumu Rak
12.	Ringchen Norgu	68	M	Ribba	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak, Mixed fruit Rak, Regu Rak, Luccha Rak & Palumu Rak
13.	Vidhata	35	M	Ribba	Dhakhang Rak, Chul Rak, Seo Rak, Regu Rak, Naspoti Rak & Mixed fruit Rak
14.	Nawang Chhetan	49	M	Jangi	Chul Rak, Seo Rak & Guram Rak
15.	Balbir Singh	58	M	Jangi	Chul Rak, Seo Rak, Dhakhang Rak, Regu Rak & Nahpoti Rak
16.	Shareb Namgyal	37	M	Jangi	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak & Mixed fruit Rak
17.	Prem Kumari	40	F	Jangi	Chul Rak, Seo Rak, Regu Rak & Guramu Rak
18.	Chet Ram	47	M	Nesang	Chwa Rak, Chhang, Guram Rak, Nesang Brandi, Seo Rak & Chul Rak
19.	Baldev Singh	46	M	Nesang	Chwa Rak, Chhang, Guram Rak, Nesang Brandi, Chwa Rak, Seo Rak & Chul Rak
20.	J.D. Negi	55	M	Nesang	Nesang Brandi, Seo Rak & Chul Rak
21.	Prem Kanta	58	F	Thangi	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak & Dakhang Rak
22.	Daba Dolma	62	F	Thangi	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak & Dakahng Rak
23.	Chander Mohan	45	M	Thangi	Chul Rak, Seo Rak, Regu Rak & Naspoti Rak
24.	Ved Vati	55	F	Morang	Chul Rak, Seo Rak, Regu Rak & Naspoti Rak
25.	Kalyan Singh	65	M	Morang	Chul Rak, Dhakhang Rak, Aadu Rak, Seo Rak, Regu Rak & Naspoti Rak

(contd.)

Table1 — List of Kinnaura tribal people interviewed in Kinnaur district of Himachal Pradesh

S.No	Names	Age	Sex	Panchayats/ Village	Types of beverages prepared
26.	Jag Mohan	66	M	Morang	Chul Rak, Seo Rak & Naspoti Rak
27.	Bhagat Singh	42	M	Morang	Dakhang Rak, Chul Rak & Seo Rak
28.	Mohan Singh	47	M	Lippa	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak & Dakahng Rak
29.	Ghyan Chand	66	M	Lippa	Chul Rak & Seo Rak
30.	Puran Kali	57	F	Lippa	Chul Rak, Seo Rak, Regu Rak & Naspoti Rak
31.	Sukh Ram	57	M	Lippa	Chul Rak & Seo Rak
32.	Leela Devi	50	F	Lippa	Chul Rak & Seo Rak
33.	Budhi Singh	59	M	Pangi	Chul Rak, Seo Rak, Regu Rak, Naspoti Rak & Dakhang Rak
34.	Padam Devi	66	F	Pangi	Chul Rak, Seo Rak, Naspoti Rak & Mixed Fruit Rak
35.	Goverdan	37	M	Pangi	Chul Rak & Seo Rak
36.	Kailash Chnader	61	M	Pangi	Dakhang Rak, Chul Rak & Seo Rak,
37.	Sunder Lal	43	M	Pangi	Chul Rak & Seo Rak
38.	Inder	34	M	Barang	Chul Rak, Seo Rak, Regu Rak & Naspoti Rak
39.	Gopi Chand	45	M	Barang	Chul Rak, Seo Rak & Naspoti Rak
40.	Preeti Bala	45	F	Barang	Dakhang Rak, Chul Rak & Seo Rak
41.	Kunga Gyakhu	56	M	Sunnam	Chul Rak, Seo Rak, Chhang & Chawa Rak
42.	Chering Zangmo	68	F	Sunnum	Chul Rak, Seo Rak, Naspoti Rak, Mixed Fruit Rak, Chhang & Chawa Rak
43.	Tulsi	48	M	Sunnum	Chul Rak, Seo Rak & Naspoti Rak
44.	Preeti	34	F	Sunnum	Chul Rak & Seo Rak
45.	Hira Mani	58	F	Kilba	Chul Rak, Seo Rak & Naspoti Rak
46.	Anita Devi	45	F	Kilba	Chul Rak, Seo Rak & Naspoti Rak
47.	Bhupender	45	M	Kilba	Chul Rak, Seo Rak & Dakhang Rak
48.	Sushma Devi	45	F	Chhitkul	Zamashang Moorie, Chwa Phasur & Gurum Phasur
49.	Thakur Bhagat	35	M	Chhitkul	Zamashang Moorie, Chwa Phasur & Gurum Phasur
50.	Kalpana Devi	48	F	Rakchham	Reg Phasur, Chul Phasur, Seo Rak & Chul Rak
51.	Partima	35	M	Rakchham	Chul Phasur, Seo Rak & Guram Rak
52.	Janki Devi	64	F	Chagaon	Chul Rak, Reg Rak, Dakhang Rak, Japani Pholangu Rak & Seo Rak
53.	Jaymanti Devi	45	F	Chagaon	Chul Rak, Reg Rak, Dhakang Rak, Seo Rak, Palamu Rak & Nahpoti Rak
54.	Pooja	32	F	Chagaon	Chul Phasur, Seo Rak & Guram Rak
55.	Manju	42	F	Kalpa	Chul Rak, Seo Rak, Naspoti Rak, Dakhang Rak, Aadu Rak, Ghuram Rak & Regu Rak
56.	Suresh Negi	47	M	Kalpa	Chul Rak, Seo Rak, Naspoti Rak, Dakhang Rak & Palamu Rak
57.	Man Mohan	42	M	Kamru	Chul Rak, Seo Rak & Naspoti Rak
58.	Prem Parkash	40	M	Kamru	Chul Rak, Seo Rak
59.	Jagat Singh	50	M	Sungra	Chul Rak & Seo Rak
60.	Ram Narayan	34	M	Sungra	Chul Rak, Seo Rak & Naspoti Rak
61.	Mukesh	43	M	Bari	Seo Rak
62.	Sidarth	40	M	Bari	Seo Rak
63.	Raj Kumar	42	M	Yangpa	Chul Rak & Seo Rak
64.	Sushil	37	M	Yangpa	Chul Rak & Seo Rak

\*During the interviews, consent has been taken orally from all respondents for publishing their names and information shared by them. In addition to this, they agreed to take the photographs and disclose the same in any forum and publication.

combinations. Stepwise details for the preparation of beverages have been given under results. The information was compiled, analyzed and documented.

Samples of each species used in the preparation of traditional alcoholic beverages was collected and identified in the laboratory with the help

of regional<sup>15,16</sup> and local floras<sup>17-21</sup>. For the nomenclature of species, The Plant List (website: [www.theplantlist.org](http://www.theplantlist.org)) has been followed. It is declared that during the field survey, Prior Informed Consent was taken from the representatives of traditional knowledge holders/informants.

### Results and Discussion

The cuisine, food habits, clothing, ornaments and life styles of Kinnaura tribe are unique, and these tribal communities are largely dependent on plant based products for their sustenance. Consumption of alcoholic beverages is quite prevalent among the men folk and these are also used for performing various sacred rituals. Keeping in view the importance of local traditional alcoholic beverages in various religious and cultural affairs, state government authorities have also granted permit to the local tribal communities for the distillation of wine for personal use. In every household, the traditional alcoholic beverages are prepared by following indigenous methods using different types of cereals and fruits for house hold use. Except in Chhang, steam distillation method is followed in preparation of all beverages but, ingredients and method for preparation of raw materials varies from place to place according to availability of raw materials. In this paper, total 15 traditional alcoholic beverages, methods for their preparation along with indigenous utilization by the Kinnaura tribes have been given below.

#### Angoori

Angoori is a famous traditional alcoholic beverage obtained from the ripened fruits of *Vitis vinifera* locally known as 'Dakhang'. It is also known as

'Dakhang Rakat' and one of the most famous traditional alcoholic beverages of Kinnaur mainly prepared in Ribba village. After the harvesting of grapes from the field, grapes are dried in the sun for 7-8 days. The fruits are separated from bunches and placed in big bronze vessel known as '*Lamthu*'. The fruits are crushed and entire fruit juice along with crushed parts of grapes are poured in large plastic drums by adding water in the ratio of 1:1 and subsequently covered properly with cloth and kept for fermentation, for 15-20 days in summer. In the past, wooden drums called as '*Jochok*' were commonly used for fermentation of grapes. To extend the fermentation period upto 5-6 months during paucity of time, local people also use underground drums locally known as "*Bragdum*" made of slate stone for the fermentation. However, in present scenario, mostly plastic drums are being used due to their light weight and their ease to carry anywhere. The wooden and underground drums are being used only by few households for fermentation purpose. During the fermentation process, yeast formation occurs and this process continues until all raw materials get decomposed. The distillation process starts immediately after removal of dead yeast, fruit coverings, seeds and other waste material from grape juice.

#### Steam distillation method

The distillation method of Angoori and other local liquor is indigenous by using traditional household utensils and raw materials (Fig. 2a). Before distillation, completely decomposed and fermented grape juice is transferred into a large bronze vessel, locally known as '*Handyaro*', "*Dikch*", "*Phuch*," and is covered with a round shaped plain slate made



Fig. 2 — (a-b) Traditional Alcoholic beverages preparation methods practiced by Kinnaura tribes, (a) Angoori wine preparation through steam distillation, (b) Nesang Brandi preparation through Steam distillation

from stone or wood having hole with 8-10 cm diameter in center. The vessel containing fermented grape juice is kept on fireplace for boiling and distillation. To prevent leakage of steam from the corners of bronze vessel and round shape plain slate, the corners of vessel are properly sealed with the paste of cow dung or clay soil or kneaded flour. In addition to this, kneaded flour is pasted around the corners of central hole of round shaped slate to prevent leakage of vapors from this point and after that a round shape bronze vessel known as '**Chatri**' or '**Rotho**' having pipe in the corner is properly placed on it for collection of wine. It is the only outlethorough which wine is extracted from the vessel in droplets. After that, a round shaped bronze pan known as '**Tasla or Pano**' or **Kundali** is placed over the '**Chatri**' or '**Rotho**' and the periphery of bronze pan attached with bronze vessel '**Chatri**' is properly sealed with knead flour to prevent leakage of steam. The bronze pan is filled with cold water or ice cubes or snowflakes periodically. One pipe is placed over the bronze pan for receiving cold water from one direction and another pipe is placed in the bronze pan for outlet of hot water. The fermented fruit juice is boiled in the bronze vessel '**Handyaro**' and steam gets condensed underside the top bronze pan and Angoori wine in the form of water droplets is collected in the container through outlet pipe attached with bronze vessel known as *Chattri*. Angoori wine starts oozing out through the pipe attached to bronze vessel (*Chatri*) immediately after continuous burning of fire for 5-8 min. Two types of Angoori wines are collected from the same fermented juice in the container. The initial more concentrated one is called as '**Angoori Moori**' whereas less concentrated one extracted during later stage, is known as '**Rashi**'. Approximately 5-6litres of '**Moori**' and 60-70 liters of '**Rashi**' are obtained from 200 liters of fermented grapes juice. One bottle of good quality Angoori Moori fetches around Rs. 2,500-3,000 and one bottle of Angoori Rashi fetches Rs. 600-800/ltr. A special wine known as '**Shudang**' is also obtained from the grapes. It is prepared by filtering the completely fermented grapes. It is sold @ Rs. 600-800/ltr.

#### **Nesang Brandi**

It is one of the most important and famous alcoholic beverages of Kinnaur district mainly prepared in Nesang village from Barley grains (*Hordeum vulgare*). The barley grains are first boiled in large bronze utensils (Handi) for 3-4 h and then

whole grains are taken out from the Handi and spread on Dohru (a local woolen sari) for desorption of water from the grains. After that, Phab (traditional inoculums in the form of dried white cake having millet or rice powder as basic ingredient) is thoroughly mixed with barley grains (50 g of Phab per Kg of Barley) on large flat stone. In the evening, entire mixture is placed in large gunny bags, covered by stone and kept for fermentation in the warm place in a room at room temperature for one week. When gunny bags release juice of grains due to decomposition, the whole mixture is transferred into the earthen pots covered with cloth or clay soil. After 12-15 days period, the mixture becomes ready for distillation. Distillation and extraction process of wine is similar to Angoori wine except that in Brandi preparation, only ice cubes are used instead of water during distillation (Fig. 2b).

#### **Zamashang Phasur**

It is local liquor particularly prepared from the tuberous root of medicinal herbs locally known as Zamashang (*Arisaema jacquemontii*) mixed with Buckwheat (*Fagopyrum tataricum*), Barley (*Hordeum vulgare*) and Wheat (*Triticum aestivum*). It is the indigenous local beverage produced only in Chhitkul village. For its preparation, the tuberous roots of *Arisaema jacquemontii* are collected from the agricultural field and wild during the month of May. The collected bulbs are grinded in the water mill "Gharat". Around 5 Kg flour obtained from the tuberous roots is thoroughly mixed with 5 Kg flour each of Buckwheat, Barley and Wheat to form 20 Kg composite sample. The thick breads (roties) having 15 cm diameter and 1-1.5 cm thickness are made from the mixed flour. After that, breads (roties) are crushed into small pieces manually and then transferred in plastic drums filled with water in a room for fermentation for 30-45 days. Approximately, 1liter of '**Zamashang Moori**' and 10-15 liters of '**Zamashang Rashi**' are made from 30 liters of fermented raw materials.

#### **Chawa Phasur**

It is also called as "**Chawa Rak**" liquor and prepared from the grains of *Fagopyrum tataricum* (Phaphra, Bras), *Hordeum vulgare* (Cha, Barley) and *Triticum aestivum* (Zod, Wheat), respectively. 5 Kg grains of each species are mixed to form 15 Kg composite sample and entire mixture is immersed in the water for 2-3 days in a container and then they are



transferred in large jute bags and placed in a room under ambient room temperature till sprouting occurs. After sprouting of grains, they are subsequently dried in sunny place. The completely dried sprouted grains are grinded in the local water mill (Gharat). The thick breads (roties) having 15 cm diameter and 1-1.5 cm thickness are made from the mixed flour along with crushed husk/seed coat. After that, breads (roties) are crushed into small pieces manually and then transferred in plastic drums filled with water and kept for fermentation at room temperature for 20-25 days during summer and 30-45 days during winter. Approximately, 1-2 liters of 'Moori' and 10-15 liters of 'Rashi' are made from 50 liters of fermented grains. Chawa Moori and Rashi are sold locally @ Rs. 1000/- 1200/ltr and @ Rs.200-300/ltr, respectively.

#### **Guram Phasur**

It is also called as "**GuramRak**" and mainly made from raw jaggery. The left out semi-solid waste of buckwheat or wheat or barley distillation mixing with jaggery is again used for the preparation of wine locally known as '**Ganti** or '**Daru**'. The initial more concentrated one called as "**Guram Moori**" whereas less concentrated one extracted during later stages is known as '**Rashi**'. Approximately 1-2 liters of 'Moori' and 10-15 liters of 'Rashi' are obtained from 30 liters of fermented grains. Moori and Rashi are sold locally @ Rs. 600/- 800/ltr and @ Rs.150-250/ltr, respectively.

#### **Chhang**

It is an important traditional alcoholic beverage of Kinnaur district and made from rice or wheat (*Oryza sativa* or *Triticum aestivum*). The method for preparation of Chhang is simple and less time consuming as compared to other local liquors produced in Kinnaur district. The raw rice/wheat grains are first cooked in the container and then transferred in cotton cloths for fermentation by adding *phab*- a local traditional inoculum. The semi-solid boiled rice/wheat wrapped in cotton cloths are kept in warm place of a room for fermentation. The fermentation completes in 4-5 days and after that, liquid having sour taste is filtered from the fermented rice. The filtered liquid is popularly called as Chang and highly relished by the local communities.

#### **Chul Rak**

It is local liquor made from the fruits of *Prunus armeniaca* (Chulli or Chul) and locally known as

'**Chulu Rakat**' or '**Chul Phasur**'. Before the preparation of this traditional beverage, fresh ripened fruits of apricot collected from the field during the month of July-August and sun dried for 15-20 days. Both fresh and dried fruits of apricots are used for liquor preparation but, in case of dried apricots, they are first dipped in luke warm water for 2-5 days to soften its fleshy part and after that, fleshy part is separated from the seed coat. After that, crushed fruits are kept for fermentation by adding water in the ratio of 1:1 in a room for fermentation for 10-12 days during summer and 15-20 days during winter at room temperature. Approximately 3-4 bottles of *Moori* and 40 liters of 'Rashi' are made from the 200 liters of Apricot juice. *Moori* and *Rashi* are sold locally @ Rs. 1000/- 1500/ltr and @ Rs.250-300/ltr, respectively.

#### **SeoRak**

It is local liquor made from the fruits of *Maluspumila* (Pale or Seo) and locally known as '**Pale Rakat**' and '**Pale Phasur**'. In apple wine preparation, locals use only those apples which are dropped or damaged during harvesting in August-September. Both, fresh and dry fruits are used but, dried fruits are first boiled after that kept for fermentation by adding water in the ratio of 1:1 in large plastic drum at room temperature for fermentation, for 20-25 days during summer and 30-35 days during winter. Approximately 3-4 bottles of 'Moori' and 40 liters of 'Rashi' are made from the 200 liters of Apple juice. *Moori* and *Rashi* are sold locally @ Rs. 1000/- 1200/ltr and @ Rs.200-300/ltr, respectively.

#### **Regu Phasur**

It is local liquor made from the fruits of *Prunusmira* (Behmi or Reg) and also known as '**Regu Rakat**.' Before the preparation of this traditional beverage, ripened fruits are collected from the field during September-October. Both, fresh and dried fruits of Behmi are used for wine preparation but, in case of dried fruits, they are first dipped in luke warm water for 2-5 days and fleshy part is separated from the seeds manually. After that crushed fruits are stored in large plastic drums and water is added in the ratio of 1:1. Air tight plastic drums are kept in room temperature for fermentation for 20-25 days during summer 30-40 days during winter. Approximately 2-3 bottles of 'Moori' and 35 liters of 'Rashi' are made from 200 liters of Behmi juice. *Moori* and *Rashi* are sold locally @ Rs. 1000/- 1200/ltr and @ Rs.200-300/ltr, respectively.

**Naspoti Rak**

It is local liquor made from the fruits of *Pyrus communis* (Nashpati or Nahpoti) locally known as '**Naspoti Rakat**'. During the preparation of this liquor, Kinnaura tribes use only those pears which are dropped or damaged during harvesting of fruits in July-August. Both, fresh and dry fruits are used for fermentation but, dried fruits are first boiled and then kept in large plastic drums for fermentation by adding water in the ratio 1:1. Approximately 3-4 bottles of '**Moori**' and 35 liters of '**Rashi**' are made from 200 liters of juice of the Pears. **Moori** and **Rashi** are sold locally @ Rs.1000/- 1200/ltr and @ Rs. 200-300/ltr, respectively.

**Aadu Rak**

A local liquor made from the fruits of *Prunus persica* (Aadu) and locally known as '**Aadu Rakat**'. The tribal communities collect peach fruits from their orchards in the months of July-August. After fresh fruits are crushed, pressed and stored in large plastic drums, water is added in the ratio of 1:1 and air tight plastic drums are kept at room temperature for 15-20 days. Approximately 4 bottles of '**Moori**' and 55 liters of '**Rashi**' are made from the 200 liters of juice of the Peach. **Moori** and **Rashi** are sold locally @ Rs. 1000/- 1200/ltr and @ Rs.200-300/ltr, respectively.

**Plumu Rak**

A local liquor made from the fruits of *Prunus ceracifera* (Plum) and locally also known as '**Plumu Rakat**'. The tribal communities collect Cherry plum from their orchards in the months of July-August. The fruits are crushed by and thereafter, crushed fruits are kept for fermentation by adding water in the ratio of 1:1 in large plastic drums. Approximately 3 bottles of '**Moori**' and 50 liters of '**Rashi**' are isolated from 200 liters of juice of the Plums. **Moori** and **Rashi** are sold locally @ Rs. 1000/- 1200/ltr and @ Rs. 200-300/ltr, respectively.

**Luchau Rak**

A local liquor made from the fruits of *Prunus domestica* (Lucha) and locally known as '**Luchau Rakat**'. The Kinnaura tribes collect fruits from their orchards in the month of September. The fruits are crushed by pressing with hands and thereafter, crushed fruits are kept for fermentation by adding water in the ratio of 1:1 in large plastic drums. Approximately, 3 bottles of '**Moori**' and 50 liters of '**Rashi**' are isolated from the 200 liters of juice of the

Plum. **Moori** and **Rashi** are sold locally @ Rs. 1000/- 1200/ltr and @ Rs.200-300/ltr, respectively.

**Japani Pholangu Rak**

A local liquor made from the fruits of *Diospyros kaki* (Japani Pholang) and locally known as '**Japani Pholangu Rakat**'. The tribal communities collect Persimon fruits from their orchards in the months of September-October. The collected fruits are crushed and kept for fermentation by adding water in the ratio of 1:1 in the plastic drums for 15-20 days in room temperature. Approximately 4 bottles of '**Moori**' and 70 liters of '**Rashi**' are prepared from 200 liters of juice of the Persimon. **Moori** and **Rashi** are sold locally @ Rs. 1000/- 1200/ltr and @ Rs. 200-300/ltr, respectively.

**Mixed Fruit Rak**

The mixed fruit liquor is prepared by mixing fruits of *Vitis vinifera*, *Prunus armeniaca*, *Prunus mira*, *Malus pumila*, *Prunus persica*, *Prunus domestica*, *Prunus ceracifera* and *Pyrus pyrifolia* as per availability. Approximately 3-4 bottles of **Moori** and 40 liters of **Rashi**' are made from 200 liters of mixed fruit juice. **Moori** and **Rashi** are sold locally @ Rs. 1000/- 1200/ltr and @ Rs. 200-300/ltr, respectively.

The details of the fruit and cereal plants used in preparation of traditional alcoholic beverages by Kinnaura tribes in Kinnaur district are given in Table 2.

**Indigenous utilization**

The traditional alcoholic beverages are important part of different customs and traditional rituals throughout the Kinnaur district. These traditional beverages are essentially required during worship of local deities and performing different religious events in village temples. In Buddhist ceremonies, local liquor is used as '**Serkem**' in performing various rituals especially in Hawan (**Jingktes**) for purification of temple premises and houses during child birth, marriages, festivals, etc. In Hindu ceremonies, it is used as '**Nimit**' in performing various rituals for pleasing local deities especially in festivals, marriages, birth and death ceremonies. Details of the indigenous uses of traditional alcoholic beverages are given below (Fig. 3 a-e).

**Cultural importance****Marriage ceremonies**

Local traditional beverages are important part of marriage ceremonies all over Kinnaur district. The



Table 2 — Fruits and cereals used for the preparation of traditional alcoholic beverages by the Kinnauras in Kinnaur district, Himachal Pradesh

S. No	Scientific Name	Family	Common name	Local name	Part used	Traditional beverages
1.	<i>Eleusine coracana</i> (L.) Gaertn.	Poaceae	Finger Millet	Kodro, Koda	Grains	Kodru Rak
2.	<i>Fagopyrum esculentum</i> Moench.	Polygonaceae	Buck wheat	Olgo, Ogla, Ogli	Grains	Olgo Rak
3.	<i>Fagopyrum tataricum</i> (L.) Gaertn.	Polygonaceae	Duck wheat	Bras, Bra, Phaphra	Grains	Brasu Rak
4.	<i>Hordeum vulgare</i> L.	Poaceae	Barley	Tag, Cha, Jhau	Grains	Chang, Tagu Rak
5.	<i>Malus pumila</i> Mill.	Rosaceae	Apple	Pale, Seo	Fruits	Seo Rak
6.	<i>Diospyros kaki</i> Thunb.	Ebenaceae	Japanese Persimon	Japani Phal	Fruits	Japanifolangu Rak
7.	<i>Prunus armeniaca</i> L.	Rosaceae	Wild Apricot	Chul, Chuli	Fruits	Chulu Rak
8.	<i>Prunus cerasifera</i> Ehrh.	Rosaceae	Cherry Plum	Plum	Fruits	Plumu Rak
9.	<i>Prunus domestica</i> L.	Rosaceae	European Plum	Lucha	Fruits	Lucha Rak
10.	<i>Prunus mira</i> Koehne	Rosaceae	Wild Peach	Reg, Behmi	Fruits	Regu Rak
11.	<i>Prunus persica</i> Batsch	Rosaceae	Peach	Aadu	Fruits	Aadu Rak
12.	<i>Pyrus communis</i> L.	Rosaceae	Pear	Nahpoti, Nashpati	Fruits	Naspati Rak
13.	<i>Triticum aestivum</i> L.	Poaceae	Wheat	Jod, Oja Gandam	Grains	Jodu Rak, Chang, Nesang Brandi
14.	<i>Vitis vinifera</i> L.	Vitaceae	Grape	Dakhang	Fruits	Angoori, Dakhang Rak, Sudung
15.	<i>Arisaema jacquemontii</i> Bl.	Araceae	Cobra Lily	Zamashang	Tuberous roots	Zamashang Rak

engagement ceremony is initiated by offering one bottle of local liquor known as ‘*Koring*’ to the bride’s family as a token of respect for the marriage proposal. The engagement is supposed to be confirmed after acceptance of the offered liquor by the bride’s family members. The family members worship the local deity/clan deity which is known as ‘*Koringpajam* or *Bottle pooja*’ with the offered liquor. During marriage ceremony, one specially designed bronze or copper vessel known as ‘*Hurch*’ containing local liquor and decorated with butter and Chilgoza garlands, is used to keeping away evil spirits. During the entire marriage ceremony, local liquor is offered to entire villagers of brides and groom family, relatives, guest, etc. as token of respect and gratitude. In addition to this, traditional beverages are used in special ritual known as ‘*Shupajasham*’ in which local deity is worshipped by offering liquor.

#### Death ceremonies

Traditional alcoholic beverages are also used after death of human being for performing various rituals. These beverages are used during various occasions after death of diseased person especially on 14<sup>th</sup> day (*Aating*), 49<sup>th</sup> day (*Unchas din*) and death anniversary (*Duforshim*) in which local liquor is offered to relatives and also to the dead soul as token of respect and gratitude. In addition to this, local liquor is also used for worshipping dead soul during Fulaich festival and this practice is locally known as ‘*Sheeza nu khu ran*’.

#### Fairs and festivals

The traditional alcoholic beverages made only from local cereals and fruits are used for worship of local deities and performing various rituals during various fairs and festivals celebrated in entire villages of Kinnaur district. They are also offered to appease the other supernatural powers believed to be residing in mountain areas of the region on the occasions of festivals.

#### Medicinal importance

The local traditional beverages are used by local communities to get relief from various ailments. One spoon of grape wine (*Angoori*) mixed with apricot oil is used by pregnant women to cure joint pain, constipation, flatulence and swelling. One spoon of grape wine mixed with honey and butter is used to cures cold, cough, fever, etc. The massage of grape wine is considered good for curing of skin allergy and improving skin complexion. The grape wine mixed with mustard oil is used to cure dandruff or hair allergy. The grape wine mixed with Behmi oil is used for getting relief from severe itching. The Apricot wine is used especially to cure indigestion problem. The local liquor “*Zamashang Moori*” is used by local people in treatment of fever, pneumonia and chest congestion.

#### Economic importance

The local traditional beverages play a significant role in improving livelihood of the tribal



Fig. 3 — (a-e) Traditional alcoholic beverages and their indigenous utilization by Kinnaura tribe; (a) Utilization of alcoholic beverages in marriage ceremonies, (b) Utilization of alcoholic beverages in Losar festival, (c) Utilization of alcoholic beverages in Beesh Festival, (d) Traditional alcoholic beverages used by Kinnaura tribes, (e) Hurch

communities. The poor and less privileged people sell the local beverages for meeting their day to day needs and improving their economic conditions. In Kinnaur district, mostly women folk are involved in the production of local traditional liquors. They earn money by selling the liquor locally and use it for fulfilling their daily household needs.

### Conclusion

The traditional alcoholic beverages prepared by diverse communities are very well known worldwide, and are very well recognized since ages<sup>22</sup>. These local drinks due hold informal status to their restricted use within the communities but, they are considered as most popular among the communities<sup>23</sup>. There is great

diversity in traditional alcoholic beverages of India due to varied geographical conditions, diverse communities, culture and availability of local raw materials for the preparation of traditional beverages<sup>24</sup>. Like other Indian Himalayan States, Himachal Pradesh also shows wide variation in culture, environment and topography. The variations in availability of raw materials and environmental conditions mainly contributed in developing region specific food preferences and beverages all over the state. The traditional alcoholic beverages, method of preparation and its consumption trend follows the same pattern in entire Kinnaur district. They are prepared at household level since generations and the processes involved in preparation of these alcoholic beverages are transferred orally from one generation to other generation. Currently, due to impact of modernization and availability of variety of wines in local market, the knowledge related to traditional alcoholic beverages is eroding very fast, and its live example is vanishing utilization of wooden drums 'Zochoks' or underground drums 'Bragdums' once used as a container for fermentation of raw materials in Kinnaur district. There is dire need to conserve these traditional beverages for wider application to benefit tribal communities. The cost of traditional beverages shows that these can be promoted as one of the livelihood options of the tribal community. Proper branding, leveling, etc., may fetch more money. Legal permission for bulk preparation of these beverages may be given to the tribal communities by the Government so that, these beverages could be sold at local, regional and national markets. This will certainly result in earning of additional income to the local communities. The documentation of raw materials and methods involved in production of traditional alcoholic beverages, is important not only for conserving traditional knowledge existing among the tribal communities but, also for strengthening small scale beverage industry for its commercialization which will definitely contribute in improving livelihood of tribal communities.

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### Conflict of Interest

The authors declare that there is no conflict of interest.

### Authors' Contributions

SL, PSN & SS: Conceptualization, survey, documentation & drafting; SSS & MKS: review and editing.

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