



## Wild Edibles of Kharal Valley, district Kullu, Himachal Pradesh

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**Abstract:** A number of wild plants are used by the rural communities, which considerably contributes to their income and food security. This study analyzed the collection and consumption pattern of wild edibles in Kharal Valley of Kullu district in Himachal Pradesh. 37 wild edibles species belonging to 28 families were recorded from the valley, many of them having multiple uses. The wild edibles constitute a part of seasonal diet of rural households, while the sale of wild edibles contributes to the income for rural households.

**Key words:** Wild Edibles, Traditional Knowledge, Traditional Healthcare, Kharal Valley, Edible Fungi,

### 1. Introduction

According to WHO, wild edibles fulfil the daily nutritional requirements of human beings, particularly those of Vitamins and minerals regulation. Wild edibles can be used as vegetables, fruits, staple food, and spices by rural communities. These play a significant role in the development of new crops through domestication, giving rise to cultivated food plants and firming local food security (Jha, *et al.* 1996; Asselin, *et al.* 2011; Uprety, *et al.* 2012). Wild plants have been used by the rural people across the world.

### 2. Material and Methods

The study area comprises Kullu district in the state of Himachal Pradesh. Extensive field surveys were made during 2020 in Kharal Valley. Kullu district is located in the heart of Himachal Pradesh. Total Geographical area of the district is 5503 sq. km. District is surrounded by five districts of Himachal Pradesh, Lahaul-Spiti on the north and east,

Kinnaur district on the south-east, Shimla district on the south, Mandi district on the south west and west and Kangra district on the north-west. Kullu is surrounded by the three mountain ranges, viz. Pir Panjal, Great Himalayan and lower Himalayan ranges. The district has rich repository of natural resources, like abundant water resources, fertile lands, forests of pine, deodar and oak and rich biodiversity. The economy of Kullu district is mainly dependent on agriculture, horticulture and tourism. Agricultural land in the district is 65,186 sq. m. The district is famous for apple and temperate fruits such as pear, plum, apricot, cherry and vegetables like tomato, pea, onion and garlic. Kullu is also known for its international fame Dussehra Festival. Kharal valley has topography of moderate slope and has clay loam and alluvial soils types. Average temperature during summer is 25°C and during winter is 8°C. Average minimum and maximum temperature during summer is 16°C and 30°C respectively.



Average minimum and maximum temperature during winter is 1°C and 14°C respectively. August and July are the warmest and January is the coolest month. Area faces climatic variation like cloud burst and hale-storm. The area has diversity of crops and flora-fauna. In order to gather information on wild edible plants used by the local communities, an interview schedule was prepared. The utilization of plant resources was identified through interview and participatory techniques. Plant species are collected which are used by local communities as food and for medicinal purpose. The identification of plants was done using standard floras.

### 3. Results and Discussion

Wild edibles hold an important position in the sociocultural, transcendent and healthcare of rural and tribal communities. India has one of the oldest and most diverse folk traditions linked with the use of medicinal plants in traditional systems of medicine. The wild plants enumerated from the study area are listed as:

**Edible Fungi:** Some of the fungi, which grow wild, are edible, while some are poisonous. These fungi grow wild in the forest and in the backyards or agriculture fields. There are found in the moist, shady area mainly under the canopies of trees or under rocks. Most of these start growing from the month of February and continue up to April, while the penny bun grows till August. The edible fungi is gathered and consumed as whole plant. All fungi edibles are cooked as vegetable and puffballs can be eaten raw. *Madhra* of *gucchi* is made during the Kullu *dham*, a traditional feast. Preparation of *madhra* involves the use of clarified butter. The spices such as coriander seeds, cumin

seeds, black cardamom, cardamom, carom seeds, chilly, asafoetida, cinnamon, fenugreek, cloves and bay leaves are fried in clarified butter. To this, curd is added slowly, followed by constant stirring. Nuts like cashew, walnut and grinded dry coconut is added to the gravy followed by boiling. After boiling, washed *gucchi* is added, stirred and cooked for some time. The curry so prepared is known as *madhra*, which is consumed with rice. The edible fungi of the valley are enlisted in the table 1.

Fiddle head fern is consumed as a vegetable and pickled. Its availability had decreased in the recent years and has shifted to upper areas of the streams/nallah. Fiddle head fern has hairs on the whole plant which must be removed before cooking or making pickle. Method of preparation of the vegetable involves frying in oil, onion, garlic, salt chilly and spices as per taste and addition of chopped fern followed by cooking until it softens. For making pickle, the *lingri* is cleaned cut into small pieces, after that it is boiled until cooked, then grinded spices such as oil, salt, chilly, *rai*, cumin seeds, coriander seeds, fenugreek seeds, black pepper are added to it. The pickle is stored in airtight container in sunshine. After 20 days the pickle is ready to eat.

**Wild Edible Plants:** There are diverse modes of using the wild edibles. Chickweed, toothed dock, Nepal dock is consumed as vegetable and leaves of toothed dock are eaten raw or consumed as salad. *Urtica*, hempseeds, rhododendron and *bhabhri* are consumed as chutney and *bhahhri* is also used to make stuffing of *siddu*. *Timer* is used as brushing twig and helpful in the tooth ache. Hemp seeds are also added in the *bhalle* of black gram. Hemp seeds have warm nature so mainly consumed in



winters. Cannabis leaves are the antidote for rashes caused by nettle. Wild plants found in the region are listed in table 2. Some of these have medicinal properties.

Table 1: Wild Edible Fungi

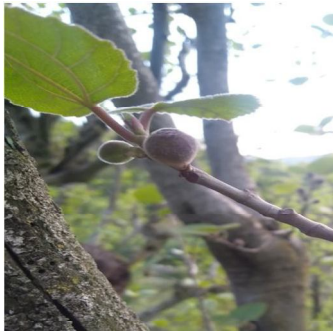
Local Name	<i>Chhochi</i>
English Name	Penny bun
Scientific Name	<i>Boletus edulis</i>
Family	Boletaceae
Mode of use	Arial part is cooked as vegetable
Local Name	<i>Bdi Chochi</i>
English Name	Lingzhi mushroom
Scientific Name	<i>Ganoderma lucidum</i>
Family	Ganodermataceae
Mode of use	Whole part is used as vegetable
Local Name	<i>Siuni kiaaun</i>
English Name	Coral/ comb tooth fungus
Scientific Name	<i>Hydnum repandum</i>
Family	Hericiaceae
Mode of use	Whole plant is cooked as vegetable
Local Name	<i>Dibbu, shoke</i>
English Name	Puffball
Scientific Name	<i>Lycoperdon pyriforme</i>
Family	Agaricaceae
Mode of use	Arial part that is balls cooked as vegetable and can be eaten raw
Local Name	<i>Gucchi, chunchru</i>
English Name	Morel
Scientific Name	<i>Morchella esculenta</i>
Family	Morchellaceae
Mode of use	Whole part is cooked as vegetable and added in <i>madhra</i> , traditional curry
Local Name	<i>Kiaaun</i>
Scientific Name	<i>Sparassis crispa</i>
English Name	Cauliflower mushroom
Family	Sparassidaceae
Mode of use	Whole part is cooked as vegetable

About 20,000 species of plants are used as wild edibles across the globe and 1532 edible wild species are reported from India (Reddy, 2007), of which over 675 species grow in the Indian Himalayan region (Pal, *et al.* 2014). The local communities residing in Kharal

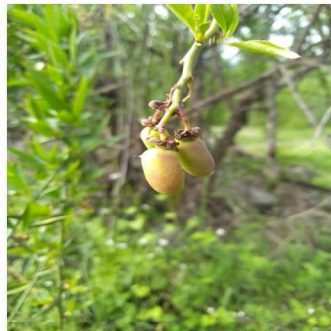
Valley of Kullu are well versed with the utilization of native flora and fauna. They use a variety of plants in their traditional food as well as for the treatment of various diseases. Since time immemorial, people have made good use of wild edible plants as a source of food security

(Sundriyal, 1998). In the present study, numerous wild edibles were found to be used by the local communities residing in the valley. A total of 37 wild edible plants were identified. Maximum plants belong to Rosaceae family. Many plants parts are consumed in raw form and don't require processing and number of species are used in local recipes. A variety of traditional recipes prepared out the wild edibles are found to be beneficial. Most of the edible plant parts are available during spring and summer season. Horse chestnut tree, fig tree, walnut tree is a source of fuel wood and fodder for cattle. Khatta is a mixture of galgal and green chutney, consumed in sunny days of December and January. Leaves, twigs and bark of walnut tree and Viburnum are used as toothbrush/*datun* and also for curing toothache. Wild pear and apricot

are dried in the sunshine for later consumption; dried fruit is called as *shakori*. Dried wild pear is also given to cattle. Oil is extracted from cherry prinsepia (*Bhekhal*) seed and bitter kernels of apricot. Oil of apricot kernels is consumed and also used for body massage. Oil of apricot is good for skin that makes skin soften and glowing. Arils of wild pomegranate are dried and used to make *chutney* and *anardana*. *Anardana* is also used in stuffing. Pickle of galgal, peach, quince and alubukhara is prepared. The fruits are cleaned, washed and cut into small pieces. Peach and alubukhara are not cut. The cut/ whole fruits are mixed with grinded spices, oil, salt, chilly, *rayi*, oregano seeds, cumin seeds, coriander seeds, fenugreek seeds, and black pepper.



**Wild fig fruit**



**Fruit of *bekhal***



**Edible fungi (*Chhochi*)**



**Wild Apricot**



**Pickle of fiddle head fern**



**Fungi edibles (*dibu*),**



**Table 2: Wild edibles of Kharal valley**

Local Name	<i>Neelkanthi</i>
English Name	Bracted Bugleweed
Scientific Name	<i>Ajuga bracteosa</i>
Family	Lamiaceae
Part Used	Leaves
Mode of use	Tea of leaves is used as medicine for controlling blood sugar level
Local Name	<i>Fauran, faran</i>
Scientific Name	<i>Allium stracheyi</i>
English Name	Baker
Family	Amaryllidaceae
Part Used	Aerial part
Mode of use	Dried leaves used as condiment
Local Name	<i>Bhang, Bhaung</i> , seeds are called as <i>magolu</i>
Scientific Name	<i>Cannabis sativa</i>
English Name	Hemp
Family	Cannabaceae
Part Used	Seeds
Mode of use	Seeds used to make chutney and added in the stuffing of <i>siddu</i>
Local Name	<i>Buransh, bras</i>
Scientific Name	<i>Rhododendron arboreum</i>
English Name	Rhododendron
Family	Rhododendraceae
Part Used	Flowers
Mode of use	Used to make squash and chutney. Flower used to cure nose bleeding.
Local Name	<i>Almora, malora</i>
Scientific Name	<i>Rumex hastatus</i>
English Name	Toothed dock
Family	Polygonaceae
Part Used	Leaves
Mode of use	Used to make chutney and also added in the vegetable
Local Name	<i>Jungly palak</i>
Scientific Name	<i>Rumex nepalensis</i>
English Name	Nepal dock
Family	Polygonaceae
Part Used	Leaves
Mode of use	Cooked as vegetable
Local Name	<i>Badyaula</i>
Scientific Name	<i>Stellaria media</i>
English Name	Chickweed
Family	Caryophyllaceae
Part Used	Aerial parts



Mode of use	Cooked as vegetable
Local Name	<i>Aahan, Bichugutti,</i>
Scientific Name	<i>Urtica hyperborea</i>
English Name	Nettle
Family	Urticaceae
Part Used	Leaves
Mode of use	Used to make chutney and to control blood pressure
Local Name	<i>Gugtu phool</i>
Scientific Name	<i>Viola ordata</i>
English Name	Banaksha
Family	Violaceae
Part Used	Flower
Mode of use	Tea used to treat stomach-ache
Local Name	Timer
Scientific Name	<i>Zanthoxylum armatum</i>
English Name	Winged prickly ash
Family	Violaceae
Part Used	Aerial parts
Mode of use	Leaves and fruits used to treat toothache and twig is used to brush teeth
Local Name	<i>Khanor</i>
Scientific Name	<i>Aesculus indica</i>
English Name	Indian horse-chestnut
Family	Sapindaceae
Part Used	Kernel, wood
Mode of use	Fruits are consumed as dry nuts
Local Name	<i>Kshambal</i>
Scientific Name	<i>Berberis asistata</i>
English Name	India berberry, Kashmal,
Family	Berberidaceae
Part Used	Ripened fruit
Mode of use	Ripen fruits consumed
Local Name	Gomru
Scientific Name	<i>Citrus limon</i>
English Name	Galgal
Family	Rutaceae
Part Used	Ripened, leaves
Mode of use	Fruit used to make pickle and leaves are used as mouth freshener
Local Name	<i>Balook, jungly japani</i>
Scientific Name	<i>Diospyros lotus</i>
English Name	Wild persimmon
Family	Ebenaceae
Part Used	Ripened Fruit
Mode of use	Ripen fruits consumed



Local Name	<i>Ghayayin</i>
Scientific Name	<i>Elaegnus parviflora</i>
English Name	Oleaster
Family	Ealeagnaceae
Part Used	Ripened fruit
Mode of use	Ripen fruits consumed
Local Name	<i>Luqat</i>
Scientific Name	<i>Eriobotrya japonica</i>
English Name	Loquat
Family	Rosaceae
Part Used	Ripened fruit
Mode of use	Ripen fruits consumed
Local Name	<i>Fagra</i>
Scientific Name	<i>Ficus palmata</i>
English Name	Wild Fig, Common Fig
Family	Moraceae
Part Used	Raw fruit
Mode of use	Fruits cooked as vegetable
Local Name	<i>Bhumbu</i>
Scientific Name	<i>Fragaria vesca</i>
English Name	Wild strawberry
Family	Rosaceae
Part Used	Fruit
Mode of use	Fruits consumed
Local Name	<i>Akhrot, khod</i>
Scientific Name	<i>Juglans regia</i>
English Name	Walnut
Family	Junglandaceae
Part Used	Nut/kernel
Mode of use	Consumed as nuts and used to make chutney and stuffing
Local Name	<i>Shehtoot, toot</i>
Scientific Name	<i>Morus alba</i>
English Name	Mulberry
Family	Moraceae
Part Used	Ripened Fruit
Mode of use	Ripen fruits consumed
Local Name	<i>Bhekhhal</i>
Scientific Name	<i>Prinsepia utillis</i>
English Name	Cherry prinsepia
Family	Rosaceae
Part Used	Seeds
Mode of use	Oil is extracted from seeds
Local Name	<i>Shaade</i>
Scientific Name	<i>Prunus armeniaca</i>
English Name	Wild apricot



Family	Rosaceae
Part Used	Raw and Ripened Fruit, kernel
Mode of use	Fruits are consumed and used to make chutney. Oil is extracted from kernels
Local Name	<i>Bidana</i>
Scientific Name	<i>Pyrus Cydonia</i>
English Name	Quince
Family	Rosaceae
Part Used	Raw fruit
Mode of use	Fruit used to make pickle
Local Name	<i>Shegal</i>
Scientific Name	<i>Pyrus pashia</i>
English Name	Wild Himalayan pear
Family	Rosaceae
Part Used	Ripened fruit
Mode of use	Ripen and dried fruits are consumed
Local Name	<i>Achari aaru, pataru</i>
Scientific Name	<i>Prunus mira</i>
English Name	Smooth pit peach
Family	Rosaceae
Part Used	Fruit
Mode of use	Fruit is consumed and used to make pickle
Local Name	<i>Ber</i>
Scientific Name	<i>Ziziphus mauritiana</i>
English Name	Indian jujube
Family	Rhamnaceae
Part Used	Raw and ripened fruit
Mode of use	Fruits consumed
Local Name	<i>Daadu</i>
Scientific Name	<i>Punica granatum</i>
English Name	Wild pomegranate
Family	Punicaceae
Part Used	Ripened fruit
Mode of use	Arils are dried for later consumption and used in the stuffing of <i>siddu</i>
Local Name	<i>Alumkhara</i>
Scientific Name	<i>Prunus bokhariensis</i>
English Name	Alubukhara
Family	Rosaceae
Part Used	Fruit
Mode of use	Fruit consumed
Local Name	<i>Thanena</i>
Scientific Name	<i>Viburnum mullaha</i>
English Name	Viburnum
Family	Adoxaceae





Part Used	Ripened fruit, twigs
Mode of use	Ripe fruits consumed and twigs used for brushing teeth
Local Name	<i>Chaunsha</i>
Scientific Name	<i>Rhamnus virgatus</i>
English Name	Buckthorn
Family	Rhamnaceae
Part Used	Raw fruit
Mode of use	Fruits consumed
Local Name	<i>Anche</i>
Scientific Name	<i>Rubus ellipticus</i>
English Name	Orange raspberry
Family	Rosaceae
Part Used	Ripened fruit
Mode of use	Fruits consumed

The pickle is stored in airtight container and kept in sunshine. After 15 to 20 days pickle is ready to eat. Leaves of galgal are also used for brushing teeth and used as mouth freshener. Fig fruit are cooked as vegetable and preferred to be consumed before mid-March or mainly before *holasht*. For making the vegetable of fig, these are washed and cut into fine pieces or can be grinded with bitter seeds of wild apricot and fried in oil along with onion, garlic, spices, salt and chilly and cooked, consumed with *bhaturu* or *chapatti*. Wild strawberry starts growing in warmer season. Walnut chutney is used as stuffing for *Siddu* and stuffed *bhaturu/ kachori* and consumed with roasted grains during winters. Nuts are offered to the local deity on religious occasions. It is believed that twig of *cherry prinsepia (bhekhal)* removes the negativity. The twigs of *bhekhal* are placed on the entrance of the houses during the *kala mahina* (August-September) to avoid the entry of negativity.

### Conclusions

Present study showed that the traditional wisdom about the use of wild edibles still exists among the local communities of Kharal Valley. The local people depend

on these wild edibles, not only for food and nutrition but also for income generation. Tenacity with the traditional foods is an influential instrument in safeguarding the ethnic identity and culture of local communities. Hence, the need of the hour is that the role of rural communities in diversification of human nutrition must be acknowledged together with the review of traditional wisdom linked with the wild edibles.

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