Wild edible fruit plants used by rural people of outer Seraj region of district Kullu, Himachal Pradesh

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ABSTRACT

Wild edible fruits can play a significant role in providing nutrition to the rural inhabitants. The present study was carried out in outer Seraj region of district Kullu, Himachal Pradesh. The data were collected through interviews, group discussions, participatory observations and semi-structured questionnaire. This survey documented total of 24 wild edible fruit plants which belonged to different categories viz 16 trees, 7 shrubs and 1 herb. These documented plants were used by the rural people of the study area as wild fruits and vegetables. It was found that the highest number (6) of wild edible plants belonged to Rosaceae family followed by Polygonaceae (4) and Berberidaceae (2) families. These wild plants were easily available from the surrounding without any cost. These plants have been reported to be of high nutritional values. Due to unscientific and ruthless exploitation coupled with habitat degradation, these species have been declining very fast. Biodiversity of all these species needs to be conserved by adopting different management practices so as to save them from extinction in the near future.

Keywords: Wild fruits; rural people; habitat degradation; biodiversity

INTRODUCTION

Wild edible plants have played a significant role in meeting the nutritional requirement and livelihood improvement of the rural inhabitants since time immemorial. These plants have been utilized for food, fibre, medicine and fodder for domestic animals (Janjua et al 2020). The utilization of wild edible plants as a nutritional supplement has a lot of potential (Prakash et al 2021). Therefore, these plants can increase quality of daily food for the rural population. The Himalayas are popularly known for their abundance of wild edible plants. The edible plants also contribute significantly for supporting the nutritional requirements of the indigenous population in distant areas of the country throughout the year (Thakur 2017). Hence, wild edible fruit plants can be potential food supplements so as to increase quality of daily food for the rural population.

In India, various studies have been carried out on the utilization pattern of wild edible plants (Satyavani et al 2015, Rashid et al 2008, Sankaran et al 2006, Upadhye et al 1994, Radha et al 2021, Valvi et al 2011, Thakur 2017).

In Himachal Pradesh, the documentation of wild edible plant diversity has been carried out through a number of studies (Jain 1991, Maikhuri et al 1998, Samant et al 1998, Chauhan 1999, Joshi et al 1999, Sood et al 2001, Dhar et al 2002, Samant and Pal 2003, Seth and Jaswal 2004, Rawat and Garg 2005, Kala 2006, Samant and Pant 2006, Uniyal et al 2006, Samant et al 2007, Rawat et al 2009, Singh et al 2009, Semwal et al 2010).

Outer Seraj area, having diverse climatic and topographic conditions, provides a diverse range of conditions for the luxuriant growth of potential medicinal plants (Singh and Rawat 1999). Indigenous people of this region collect wild edible plants for food and other plants from natural areas to fulfil their subsistence needs, in addition to planting a few crops. These fruit plants are threatened by population pressure and man's activities like grazing and burning. In addition, due to

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westernization, new generation is not much interested in traditional knowledge of plants so there is urgent need to document traditional knowledge of wild edible plants from this unexplored region of Himachal Pradesh. This region also requires further exploration in order to encourage the domestication of commercially relevant species. Therefore, there is an urgent need to document various important wild edible plant species of this area. This study would be helpful for future researchers and scientists working in the field of systematic, biochemical and pharmacological studies.

METHODOLOGY

Outer Seraj is one of the most beautiful regions of Kullu district blessed with beautiful flora and fauna. It is situated between 31°39'32" N latitude and 77°23'12" E longitudes and elevation range from 700 m to 5,500 m amsl (Fig 1). The study area comprised 60 villages of Anni and Nirmand blocks of Kullu district.

The present study included extensive field surveys conducted in the year 2022 and 2023. In current study, villagers were surveyed at household level and data were collected through interviews, group discussions, participatory observations and semi-structured questionnaire. Information was obtained on local names, part(s) used and indigenous uses of the plants. The informants included men, women, youths and elders between the age of 28 and 75 years. The information was documented and analyzed for various parameters. Collection of fresh samples was done and samples were identified with the help of sources on local flora (Collett 1902, Aswal and Mehrotra 1994, Dhaliwal and Sharma 1999, Singh and Rawat 2000).

RESULTS and DISCUSSION

In current the study a total of 24 edible wild fruit plants were reported from the outer Seraj area (Table1). The detailed information regarding local name, medicinal use of plant species and their mode of application is presented. The documented 24 plant species from the study area belonged to 13 families and 18 genera. It was observed that most of the plant species were reported from Rosaceae, Moraceae and Berberidaceae families. Rosaceae family was represented by total 6 species followed by Moraceae by 4, Berberidaceae by 2, while the other families

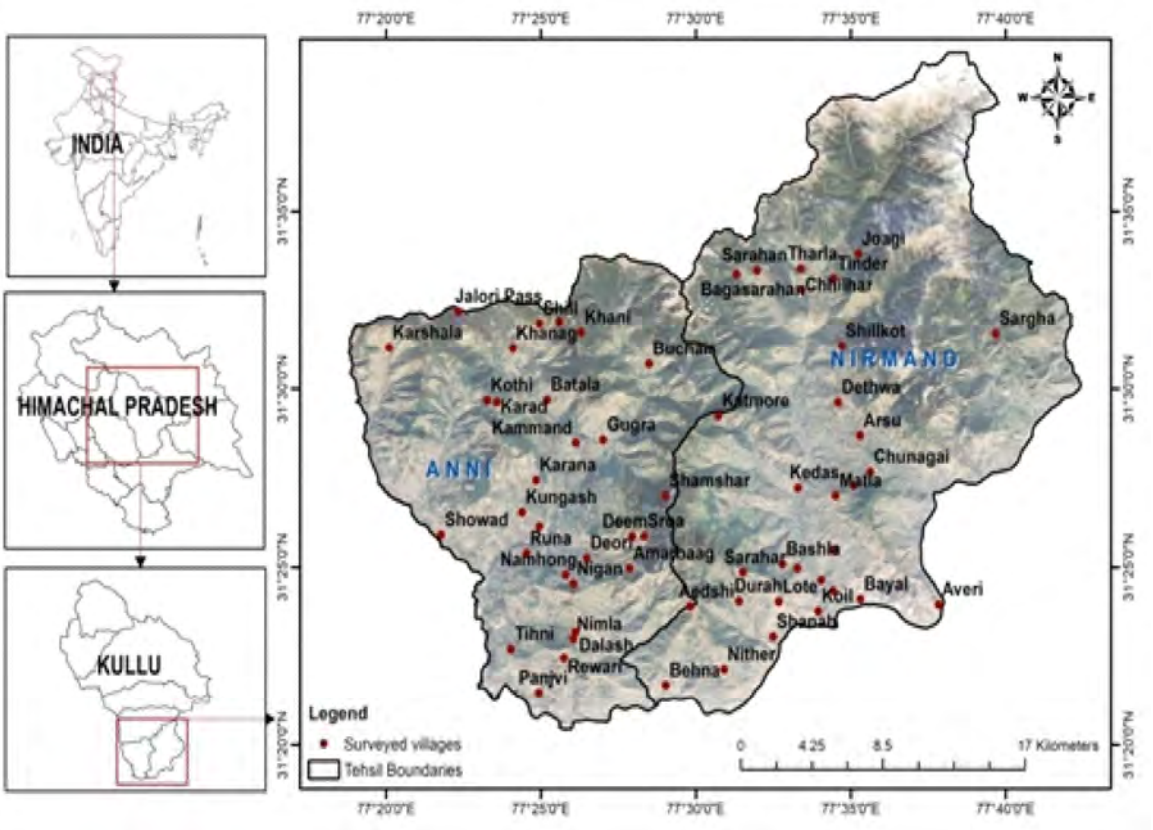


Fig 1. Map of outer Seraj region depicting study area

Table 1. Wild edible fruit plants and their uses in outer Seraj, Kullu, Himachal Pradesh

Botanical name	Family	Local name	Habit	Edible part(s)	Mode of consumption	Medicinal use(s)
Aegle marmelos (L) Corrêa	Rutaceae	Bel	Tree	Fruit pulp	Natural drink prepared from mucilaginous pulp	Treating dysentery, vomiting, fever
Aesculus indica (Wall ex Cambess) Hook	Sapindaceae	Khanor	Tree	Ripe fruits	Dried fruits crushed into flour and used as tonic	Cures body weakness, menstrual problems
Berberis aristata DC	Berberidaceae	Kashmal	Shrub	Ripe fruits	Fruits edible	Jaundice, piles
Berberis lycium Royle	Berberidaceae	Kashmal	Shrub	Ripe fruits	Fruits eaten	Jaundice, cough, malaria, cold
Carissa spinarum L	Apocynaceae	Karonda	Shrub	Ripe fruits	Ripe fruits eaten	Headache, rheumatism
Cordia dichotoma G Forst	Cordiaceae	Lasura	Tree	Ripe fruits	Mucilage from ripe fruits used as gum	Cough, cold
Ficus auriculata Lour	Moraceae	Trimbal	Tree	Ripe, unripe fruits	Unripe fruits used as vegetable; ripe fruits eaten	Dysentery, diabetes, piles
Ficus carica L	Moraceae	Fedu	Tree	Ripe, unripe fruits	Unripe fruits used as vegetable; ripe fruits eaten	Diabetes
Ficus palmata Forsk	Moraceae	Fegda	Tree	Ripe, unripe fruits	Unripe fruits used as vegetable; ripe fruits eaten	Constipation
Ficus racemosa L.	Moraceae	Gular	Tree	Ripe, unripe fruits	Unripe fruits used as vegetable; ripe fruits eaten	Diabetes, liver disorders
Flacourtia indica (Burm f) Merr	Salicaceae	Kangru	Tree	Ripe fruits	Acidic ripe fruits eaten	Treating diarrhoea
Fragaria indica Wall	Rosaceae	Bhumlae	Herb	Ripe fruits	Ripe fruits edible	Blood purifier
Juglans regia L	Juglandaceae	Khod	Tree	Ripe fruits	Nuts consumed after sun drying	Skin disorders, arthritis
Myrica esculenta Buch-Ham ex D Don	Myricaceae	Kaphal	Tree	Ripe fruits	Ripe fruits consumed directly	Asthma, cough, inflammation
Phyllanthus emblica L	Phyllanthaceae	Aonla	Tree	Ripe fruits	Ripe fruits edible	Stomach-ache, eye complaints, fever
Princepia utilis Royle	Rosaceae	Bhekhal	Shrub	Ripe fruits	Ripe fruits edible	Cough, cold, high blood pressure

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Botanical name	Family	Local name	Habit	Edible part(s)	Mode of consumption	Medicinal use(s)
Prunus armeniaca L	Rosaceae	Khumani	Tree	Ripe fruits	Ripe fruits sweet in taste, eaten	To treat constipation
Prunus cornuta (Wall ex Royle) Steud	Rosaceae	Himalayan bird cherry	Tree	Ripe fruits	Ripe fruits eaten	Digestive problems, skin diseases
Punica granatum L	Lythraceae	Daru, Anar	Tree	Ripe fruits	Ripe fruits edible	Diabetes
Pyrus pashia Buch-Ham ex D Don	Rosaceae	Kainth	Tree	Ripe fruits	Ripe fruits eaten	Conjunctivitis
Rubus ellipticus Sm	Rosaceae	Hinsar	Shrub	Ripe fruits	Ripe fruits eaten	Bronchitis and diabetes
Rubus niveus Thunb	Rosaceae	Aakhe	Shrub	Ripe fruits	Ripe fruits eaten	Antistress, antibacterial
Syzygium cumini (L) Skeels	Myrtaceae	Jamun	Tree	Ripe fruits	Ripe fruits eaten	Diabetes
Ziziphus nummularia (Burm f) Wight & Arn	Rhamnaceae	Ber	Shrub	Ripe fruits	Ripe fruits sweet in taste, edible	Indigestion, dysentery

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reported during the current survey represented 1 species each (Fig 2).

It was observed that most of the edible plant species reported from outer Seraj region were trees (66.67%) followed by shrubs (29.17%) and herb (4.2%) (Fig 3). The ripe fruits were most commonly used as edible plant part followed by fruit pulp. These wild fruits are of great importance due to their medicinal properties. The common diseases people used to treat were cold, cough, fever, constipation, wounds, joint pain, dysentery, jaundice, piles, diabetes etc. Some importnat edible wild fruit plants of outer Seraj area are shown in Plate 1.

Wild plants have shown an important role among rural inhabitants that relied on wild food resources for food and medicinal purposes. The people of this area had been living in isolated, mountainous region or close to forest areas, where no proper transportation and healthcare facilities were accessible. Research on wild edible fruit species was intended to promote the preservation of these twenty four species and for welfare of local communities in order to supply their nutritional requirements. In addition to their nutritional value, the preservation of these underutilized edible fruits also has economical advantages.

An attempt can be made to utilize these edible wild fruits as a source of income, particularly for poor rural poor and unemployed youth. With little efforts, a variety of products can be made from the wild edible fruits and supplied to food processing industries. The medicinal values of these fruits as tonics and appetizers have further scope of their popularity. There is a need to conduct systematic, biochemical and pharmacological studies to validate the traditional claims.

CONCLUSION

From the present study, it is evident that underutilized wild edible fruit plants provide nutrition to the forest dwellers and many of the marginalized rural inhabitants since the commonly cultivable fruits are costly and unaffordable for them. However, due to modernization, there has been continuous decline in the use of locally available resources as a source of food and relying entirely on staple food plants. There is an urgent need to investigate how to reduce the current reliance on staple crops to meet the needs of the society. During the study, it was found that most of the fruits documented were normally eaten raw when they were ripe, whereas, unripe fruits were usually cooked as vegetables. It is recommended that documentation and conservation of wild edible plants is very important before these are eliminated from the society. It is feared that they will become extinct in due course of time. This study would also be helpful for food industry to develop new edible food products.

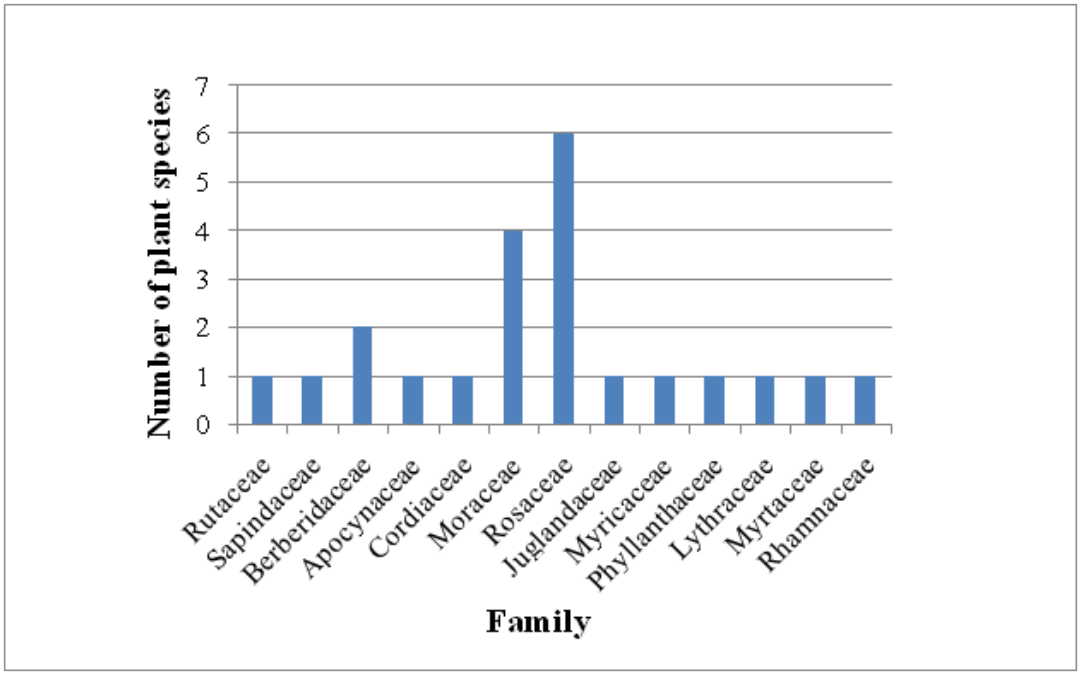


Fig 2. Wild edible fruit plants of outer Seraj, Kullu as per families

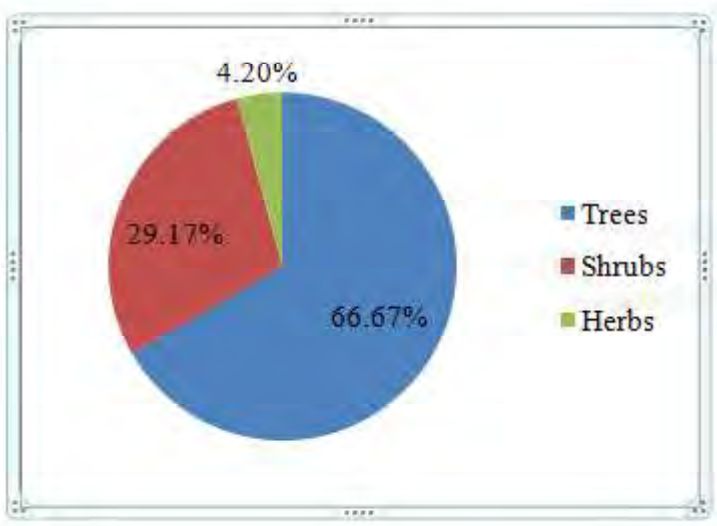


Fig 3. Habit-wise distribution of wild edible fruit plants of outer Seraj, Kullu

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Fragaria indica



Pyrus pashia



Ficus racemosa



Berberis aristata



Myrica esculenta



Prunus cornuta

Plate 1. Some importnat wild edible fruit plants of outer Seraj region of Kullu district, Himachal Pradesh

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