Wild Food Plants of Shivapuri Nagarjun National Park in Central Nepal

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Abstract

An ethnobotanical study of wild food plants was conducted at Shivapuri Nagarjun National Park, Kathmandu, Central Nepal. The objective of the study was to document the diversity of wild food plants used by the people in the study area and to highlight the utilization pattern of the edible plant resources. During the study, a total of 66 species of edible plants have been recorded belonging to 53 genera and 37 families. Out of total species recorded, 28 species are consumed as fruits, 24 species as vegetables, 6 species as pickles, 4 species as spices, 2 species as beverages and 2 as local liquor. Rosaceae contributes the highest number of 9 wild edible species followed by Urticaceae (5 species) and Berberidaceae (4 species). Herbs represent the highest number of 30 species, followed by shrubs (17 spp.), trees (14 spp.) and climbers (5 spp.).

Key words: Wild food plants, Shivapuri Nagarjun National Park, Ethnobotany.

INTRODUCTION

Plant diversity plays an important role in maintaining the world's food demands. Wild edible plants have been playing significant role in the life and culture of indigenous local communities in various part of the world (Saqib *et al.* 2011; Lungphi *et al.* 2018). Maundu *et al.* (1999) reported that majority of the rural communities in developing countries depend on wild food plants to meet their nutritional requirement during the period of food shortage. Wild food plants play a significant role in the livelihood of rural communities in many developing countries (Johns & Kokwaro 1991; Leakey & Newton 1994). Approximately, 75,000 species of plants world-wide are believed to be edible (Walters & Hamilton 1993). In Nepal about 600 species of plants are estimated to be used as sources of food and food additives (DMP 1982; Pohle 1990; Chaudhary 1998; Rajbhandari 2001; Manandhar 2002). Some research has also demonstrated that most of the wild food plants are rich with nutrients or therapeutic values due to the presence of bioactive compounds and therefore can be considered as nutraceutical agents (Sanchez-Mata *et al.* 2012; Pereira *et al.* 2011). As the world's population rises, food production becomes a concern. Currently 20 % of the total population of the developing world is affected by malnutrition (WHO 2000). Sustainable consumption of non-cultivated edible plants could ease this burden. The nutritive value of wild fruits and vegetables is tremendous, providing vitamins and mineral salts that are essential component of a balanced diet. Wild food plants of Nepal have been documented in the past by many authors including Shrestha (1978), Regmi (1979), Bajracharya (1979), Bajracharya *et al.* (1982), Kattel (1982), Maskey & Shah (1982), Shrestha (1983), Manandhar (1995, 1997, 2002), Amatya (1999), Panday (2003), Joshi (2004), and Shrestha & Dhillon (2006). However, till date there is no such publication concentrating solely on the wild food plants of Shivapuri Nagarjun National Park in Central Nepal.

MATERIALS AND METHODS

The Park is located between 27° 45' N and 27° 52' N latitudes and 85° 15' E and 85° 30' E longitudes covering an area of about 159 km² of Kathmandu, Nuwakot and Sindhupalchok districts of Central Development Region of Nepal (Figure 1). This protected area falls entirely within the middle mountain range of Nepal. It is located on the northern fringe of the Kathmandu valley with elevation ranges from 1360 m to 2732 m at the Shivapuri peak. However, most part of the park lies between 1600 m to 2500 m above the mean sea level (Anonymous 2004).

Figure 1. Map of Shivapuri Nagarjun National Park [Source: Topographic Map, Department of Survey, SNNP and DNPWC, GoN]

In the lower belt (up to 2000 m) *Schima-Castanopsis* association form the main forest and the dominant tree species are *Schima wallichii*, *Castanopsis indica*, *C. tribuloides* and the species like *Alnus nepalensis*, *Eurya acuminata*, *Prunus cerasoides* etc. are the associated plants. In this belt pine forest is found in open sunny areas. The middle belt (2000 m to 2300 m) is occupied by Mixed Oak forest with dominant trees are *Quercus lanata*, *Rhododendron arboreum*, and *Cyclobalanopsis glauca* (= *Quercus glauca*). The associated species include *Eurya acuminata*, *Lyonia ovalifolia*, *Myrsine semiserrata*, *Quercus semecarpifolia*, *Magnolia champaca*, and *Rhus succedanea*. And, the Oak-forest is covering the upper belt (2300 m to 2732). The dominant trees in this belt are *Quercus semecarpifolia*, *Quercus lamellosa*, and *Rhododendron arboreum* with commonly associated species include *Pieris formosa*, *Ilex excelsa*, *Viburnum nervosum*, *Lindera pulcherima*, etc. (Anonymous 2004). SNNP symbolizes high

biological diversity and harbors some endemic species of plants and animals. There is an estimation that it harbors a total of 2,122 plant species and 16 endemic flowering plants (BPP 1995).

Several field observations were made in six villages of Shivapuri Nagarjun National Park (SNNP) *Ookhrani, Mulkharka, Mahankal, Chilaune, Gagal, Chisapani* during the years 2010 - 2013. The information were gathered through direct interviews and discussions with 130 respondents at home and at field. In Ookhrani, interview was taken with 25 respondents, similarly in Mulkharka, Mahankal, Chilaune Gagal and Chisapani; interview was taken with 26, 26, 25 and 28 respondents respectively. Three sites in the Park were selected for the present work: (1) Sundarijal (1700 – 2400 m) on the eastern side; (2) Panimuhan (1700 – 2700 m) at the middle; and (3) Kakani (2100 – 2400 m) on the western side of the park.

Voucher specimens for the recorded plants were identified in the laboratory using available standard literature including Hooker (1872- 1897), Malla *et al.* (1973, 1986), Lawrence (1967). Identification of specimens were confirmed by matching at the National Herbarium and Plant Laboratories (KATH) Godavary, Lalitpur. The voucher specimens were deposited at the Tribhuvan University Central Herbarium (TUCH), Kirtipur, Kathmandu. The updated nomenclature and presently accepted family delimitation has been checked from the www.plantsoftheworldonline.org. The recorded taxa are arranged in alphabetical order with botanical name followed by family in parenthesis and reference to their voucher specimens. The Nepali name (N), habit and plant parts used are also provided.

Permission for working in the SNNP was taken from the Department of National Park and Wildlife Conservation and Warden Office of the Shivapuri Nagarjun National Park and also permission was taken from the local communities for working with their traditional knowledge. Local knowledgeable people and relevant literature (Manandhar 2000) were taken into account for the local names. Important information such as uses, local names was recorded by informal discussion with local inhabitants, mostly with local healers (*Vaidhya, Dhami*) and senior citizens.

RESULTS

A total of 66 species were recorded as wild food plants belonging to 53 genera and 37 families. Among 66 wild food plants, 28 were fruits, 24 leafy-vegetables, 6 pickles, 4 spices, 2 used for making beverages and 2 used in preparing local fermented liquor. Highest number of species was observed from Rosaceae followed by Urticaceae and Berberidaceae. A total of 30 species were herbs followed by 17 species of shrubs 14 species of trees and 5 species of climbers (Figure 2). As per as plant-part used, fruits represent the highest number of 28 species, followed by leaves of 20 species.

Figure 2. Graphical representation of the number of wild edible plants collected from different habit

ENUMERATION OF WILD FOOD PLANTS

[Abbreviation used: N = Nepale language]

Allium wallichii Kunth [Amaryllidaceae]. *Ban-lasun* (N).

Herb; young leaves used as vegetable; cloves as substitute for garlic

Specimen cited: Bagdwar, *Sabina 091*, dated October 06, 2010.

Alsophila spinulosa (Wall. ex Hook.) R.M.Tryon; Syn. *Cyathea spinulosa* Wall. ex Hook. [Cyatheaceae]. *Rukh unyu* (N)

Tree (unbranched); soft pith used as vegetable

Specimen cited: Kakani, *Sabina 582*, August 28, 2010.

Amaranthus spinosus L. [Amaranthaceae]. *Ban-lunde, Lunde-kanda* (N).

Herb; tender shoots and leaves cooked as a vegetable

Specimen cited: Sundarijal, *Sabina 024*, dated June 02, 2010.

Berberis asiatica Roxb. ex DC. [Berberidaceae]. *Chutro, Muse-chutro* (N).

Shrubs: ripe fruits eaten fresh or pickled

Specimen cited: Panimuhan, *Sabina 155*, dated March 08, 2011.

Berberis chitria Buch.Ham. ex Lindl. [Berberidaceae]. *Choto-chutro, Lekh-chutro, Juga-chutro* (N).

Shrubs; ripe fruits eaten fresh; roasted seeds pickled

Specimen cited: Kakani, *Sabina 471*, dated October 02, 2011.

Berberis napaulensis (DC.) Spreng.; Syn. *Mahonia napaulensis* DC. [Berberidaceae]. *Jamane mandro* (N).

Shrub, branches few; ripe fruits eaten raw or pickled

Specimen cited: Bagdwar, *Sabina 115*, dated April 10, 2013.

Basella alba L. [Basellaceae]. *Poi saag* (N).

Herbaceous trailer or climber; young leaves and shoots cooked as vegetable or used for salad

Specimen cited: Kakani, *Sabina 442*, dated September 07, 2010.

Boehmeria ternifolia D.Don [Urticaceae]. *Kamley* (N).

Shrub; tender leaves and shoots cooked as vegetable

Specimen cited: Kakani, *Sabina 369*, dated August 15, 2010.

Cannabis sativa L. [Cannabaceae]. *Bhaang, Gaanja* (N).

Herb; seeds roasted and pickled

Specimen cited: Mahankal, *Sabina 055*, dated Aug29, 2010.

Chlorophytum nepalense (Lindl.) Baker [Asparagaceae]. *Ban pyaj* (N).

Herb; tender leaves used as a vegetable

Specimen cited: Kakani, *Sabina 328*, dated August 15, 2010.

Castanopsis indica (Roxb. ex Lindl.) A.DC. [Fagaceae]. *Dhale-kattus* (N).

Tree; endosperm edible.

Specimen cited: Kakani, *Sabina 577*, dated September 07, 2010.

Castanopsis tribuloides (Sm.) A.DC. [Fagaceae]. *Musure kattus* (N).

Tree; seeds (endosperm) eaten raw or roasted

Specimen cited: Kakani, *Sabina* , dated September 07, 2010.

Camellia kissi Wall. [Theaceae]. *Hinguwa, Ban-chiya* (N).

Shrub; leaves steamed dried and used as substitute for tea; flowers pickled after boiling

Specimen cited: Mahankal, *Sabina* 477, dated October 02, 2012.

Cautleya spicata (Sm.) Baker [Zingiberaceae]. *Ban-besar, Sano-saro* (N).

Herb (epiphytic or lithophytic); inner part of stem eaten as vegetable

Specimen cited: Kakani, *Sabina* 366, dated August 29, 2010.

Choerospondias axillaris (Roxb.) B. L. Brutt & A.W.Hill [Anacardiaceae]. *Lapsi* (N).

Tree; fruits eaten fresh or pickled; dried pulp to make marmalades

Specimen cited: Panimuhan, *Sabina* 590, dated August 13, 2010.

Cinnamomum tamala (Buch.-Ham.) T.Nees & C.H.Eberm. [Lauraceae]. *Tejpat* (N).

Tree; bark and leaves used as aromatic-spices in curries, meats, vegetables

Specimen cited: Kakani, *Sabina* 374, dated August 29, 2010.

Debregeasia longifolia (Burm.f.) Wedd. [Urticaceae]. *Tusarey* (N).

Shrub; ripe fruits eaten fresh and raw

Specimen cited: Panimuhan, *Sabina* 125, dated December 14, 2012.

Dendrocalamus strictus (Roxb.) Nees [Gramineae *nom.cons.*]. *Tama bans* (N).

Tall herb; young shoots cooked as vegetable

Specimen cited: Sundarijal, *Sabina* 302, dated August 08, 2012.

Dioscorea bulbifera L. [Dioscoreaceae]. *Ban tarul, Bhyakur* (N).

Climbing herb from perennial tuberous root-stock; root tubers boiled and eaten as vegetable

Specimen cited: Panimuhan, *Sabina* 166, dated December 14, 2011.

Dioscorea deltoidea Wall. ex Griseb. [Dioscoreaceae]. *Bhyakur* (N).

Climbing herb from perennial tuberous root-stock; root tubers boiled and eaten as vegetable

Specimen cited: Panimuhan, *Sabina* 207, dated July 25, 2011.

Drepanostachyum falcatum (Nees) Keng f. [Gramineae *nom.cons.*]. *Nigalo* (N).

Tall herb with culm; young shoots cooked as a vegetable

Specimen cited: Sundarijal, *Sabina* 244, dated August 02, 2012.

Drymaria villosa Schltdl. & Cham. [Caryophyllaceae]. *Abhijaalo* (N).

Diffuse herb; tender leaves cooked as vegetable

Specimen cited: Sundarijal, *Sabina* 360, dated August 27, 2010.

Dryopteris caroli-hopei Fraser-Jenk. [Dryopteridaceae]. *Kalo-danthe-neuro* (N).

Herb; young fronds used as green vegetable

Specimen cited: Kakani, *Sabina* 409, dated September 05, 2011.

Duhaldea cappa (Buch.-Ham. ex D.Don) Pruski & Anderb.; Syn. *Inula cappa* (Buch.- Ham. ex D.Don) DC. [Compositae *nom.cons.*]. *Gaitihare, Tibare-phul* (N).

Shrub (Suffrutescent); leafy whole plant used to make *marcha* (starter mixture) for local alcoholic fermented drink

Specimen cited: Sundarijal, *Sabina* 497, dated October 03, 2010.

Dysphania ambrosioides (L.) Mosyakin & Clemants; Syn: *Chenopodium ambrosoides* L. [Amaranthaceae]. *Rato-latte, Pasare-bethe* (N).

Herb (aromatic); tender leaves and shoots cooked as vegetable

Specimen cited: Mahankal, *Sabina* 063, dated September 07, 2012.

Eriobotrya dubia (Lindl.) Decne [Rosaceae]. *Jure-kaphal* (N).

Tree; ripe fruits eaten fresh

Specimen cited: Sundarijal, *Sabina* 559, dated May 02, 2011.

Eschenbachia japonica (Thunb.) J.Kost.; Syn: *Conyza japonica* (Thunb.) Less. ex DC. [Compositae *nom.cons.*]. *Salaba-jhar* (N).

Herb; flower heads (capitula) used to make *marcha* (starter mixture) for fermenting rice or millets (*Eletsine coracana*) to prepare local beer.

Specimen cited: Ganeshtan, *Sabina* 289, dated August 09, 2010.

Gaultheria fragrantissima Wall. [Ericaceae]. *Dhasingare, Padkine* (N).

Shrub; ripe fruits eaten raw

Specimen cited: Barratar, *Sabina* 080, dated August 06, 2010.

Gonostegia hirta (Hassk.) Miq. [Urticaceae]. *Aterno, Mass-lahare* (N).

Small herb; fresh fruits considered refreshing

Specimen cited: Sundarijal, *Sabina* 235, dated August 01, 2012.

Hemiphragma heterophyllum Wall. [Plantaginaceae]. *Nash jhar, Ratogeri* (N).

Prostrate herb; ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina* 149, dated December 19, 2010.

Houttuynia cordata Thunb. [Saururaceae]. *Guande, Ganaune-jhar* (N).

Prostrate herb; tender leafy shoots cooked as vegetable and also pickled

Specimen cited: Jhor, *Sabina* 003, dated May 31, 2010.

Juglans regia L. [Juglandaceae]. *Okbar* (N).

Tree; embryo eaten raw

Specimen cited: Panimuhan, *Sabina* 650, dated March 29, 2013.

Koenigia mollis (D.Don) T.M.Schust. & Reveal, Syn: *Aconogonum molle* (D. Don) H. Hara [Polygonaceae]. *Thotaney* (N)

Shrub; young shoots eaten as vegetable and made into pickles

Specimen cited: Panimuhan, *Sabina* 164, dated March 08, 2013.

Lecanthus peduncularis (Royle) Wedd. [Urticaceae]. *Khole-jhar, Khole-saag* (N).

Prostrate herb; tender shoot cooked as vegetable

Specimen cited: Sundarijal, *Sabina* 264, dated August 08, 2012.

Malus domestica (Suckow) Borkh.; Syn. *Malus pumila* Mill. [Rosaceae]. *Bhotimayal* (N).

Tree; fresh fruits eaten raw

Specimen cited: Panimuhan, *Sabina* 202, dated July 25, 2012.

Melastoma malabathricum L. [Melastomataceae]. *Thulo-chulesi* (N).

Shrub (Suffrutescent); ripe seeds eaten fresh (by children)

Specimen cited: Jhor, *Sabina* 001, dated May 31, 2010.

Mentha spicata L. [Lamiaceae]. *Pudina, Bawari* (N).

Diffuse herb; leaves crushed to make pickled

Specimen cited: Sundarijal, *Sabina* 058, dated August 29, 2010.

Myrica esculenta Buch.-Ham. ex D.Don [Myricaceae]. *Kaphal* (N).

Tree; ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina* 167, dated March 08, 2013.

Nephrolepis cordifolia (L.) C.Presl; Syn. *Nephrolepis auriculata* (L.) Trimen [Polypodiaceae]. *Pani-aamla* (N).

Herb; root tubers eaten to quench thirst

Specimen cited: Kakani, *Sabina* 440, dated September 07, 2010.

Osyris lanceolata Hochst. & Steud.; Syn. *Osyris wightiana* J.Graham [Santalaceae]. *Nundhiki, Ban-chiyapatey* (N).

Shrub; leaves steamed, dried in the shade and use as tea

Specimen cited: Panimuhan, *Sabina* 152, dated July 25, 2010.

Oxalis corniculata L. [Oxalidaceae]. *Chari-amilo* (N).

Small herb with runners; fresh leaves chewed like gum or pickled.

Specimen cited: Sundarijal, *Sabina* 025, dated June 08, 2012.

Oxalis latifolia Kunth [Oxalidaceae]. *Thulo chari-amilo* (N).

Bulbous herb; young leaves pickled

Specimen cited: Sundarijal, *Sabina* 026, dated June 09, 2012.

Prunus cerasoides Buch.-Ham. ex D.Don [Rosaceae]. *Paiyun, ban-paiyun* (N).

Tree with transversely opening bark; ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina* 134, dated December 19, 2011.

Prunus napaulensis (Ser.) Steud. [Rosaceae]. *Jangali-aaru* (N).

Tree; ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina* 480, dated May 29, 2011.

Polystichum squarrosus (D.Don) Fée [Polypodiaceae]. *Bhyagute_neuro* (N).

Herb; young fronds cooked as vegetable

Specimen cited: Panimuhan, *Sabina* 630, dated July 25, 2010.

Pyracantha crenulata (D. Don) M.Roem [Rosaceae]. *Ghangaru* (N).

Small bushy shrub; ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina* 203, dated July 25, 2010.

Pyrus pashia Buch.-Ham. ex D.Don [Rosaceae]. *Mayal* (N).

Tree; ripe fruits edible.

Specimen cited: Panimuhan, *Sabina 051*, dated October 27, 2010.

Ranunculus sceleratus L. [Ranunculaceae]. *Samphu-jhar* (N).

Herb in marshy land; poisonous plant; tender shoots boiled first to remove poison and then cooked as vegetable

Specimen cited: Sundarijal, *Sabina 261*, dated August 08, 2011.

Rorippa indica (L.) Hiern. [Cruciferae]. *Tori-ghans* (N).

Small annual herb; tender leafy shoots cooked as vegetable

Specimen cited: Sundarijal, *Sabina 305*, dated September 22, 2011.

Rubus acuminatus Sm. [Rosaceae]. *Raato-ainselu* (N).

Scrambling shrub; ripe fruits eaten raw

Specimen cited: Kakani, *Sabina 418*, dated August 15, 2010.

Rubus ellipticus Sm. [Rosaceae]. *Ainselu* (N).

Thickly prickly shrub; freshly collected ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina 162*, dated March 08, 2010.

Rubus paniculatus Sm. [Rosaceae]. *Kaalo ainselu* (N).

Scrambling shrub; freshly collected ripe fruits eaten raw

Specimen cited: Kakani, *Sabina 600*, dated August 15, 2010.

Rumex nepalensis Spreng. [Polygonaceae]. *Halhaley* (N).

Rosette perennial herb; leaves and young inflorescence cooked as vegetable

Specimen cited: Sundarijal *Sabina 021*, dated June 02, 2012.

Saurauia napaulensis DC. [Actinidiaceae]. *Gogun* (N).

Small tree; ripe fruits edible

Specimen cited: Sundarijal, *Sabina 640*, dated September 10, 2011.

Schizotechium monospermum (Buch.-Ham. ex D.Don) Pusalkar & S.K.Srivast.; Syn. *Stellaria monosperma* Buch.-Ham. ex D.Don [Caryophyllaceae]. *Jethi madhu*, *Mhanjari* (N).

Diffuse herb; tender shoots and leaves cooked as vegetable

Specimen cited: Bagdwar, *Sabina 090*, dated October 06, 2011.

Scurrula parasitica L. [Loranthaceae]. *Ainjern* (N).

Stem-semi-parasitic shrub; ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina 113*, dated October 07, 2010.

Smilax aspera L. [Smilacaceae]. *Kukurdiano* (N).

Prickly climbing shrub; tender leafy shoots cooked as vegetable

Specimen cited: Kakani, *Sabina 469*, dated October 02, 2010.

Smilax lanceifolia Roxb. [Smilacaceae]. *Chhativan* (N).

Prickly climbing shrub; young leafy shoots cooked as vegetable; freshly collected ripe fruits eaten raw

Specimen cited: Panimuhan, *Sabina 132*, dated July 25, 2012.

Solanum nigrum L. [Solanaceae]. *Bibi, Kaaligeri* (N).

Herb; tender shoots and leaves cooked as vegetable; ripe berries eaten raw

Specimen cited: Sundarijal, *Sabina 034*, dated 8-June 08, 2010.

Stellaria media (L.) Vill. [Caryophyllaceae]. *Armale-jbaar* (N).

Diffuse annual herb; tender leafy shoots cooked as vegetable

Specimen cited: Sundarijal, *Sabina 028*, dated 8-June 08, 2010.

Urtica dioica L. [Urticaceae]. *Sishnu* (N).

Much branched singing shrub; tender leafy shoots cooked as vegetable

Specimen cited: Panimuhan, *Sabina 518*, dated July 25, 2012.

Zanthoxylum armatum DC. [Rutaceae]. *Timur* (N).

Large shrub; fresh collected fruits made into pickle; fresh and dry fruits also used as spice

Specimen cited: Bagdwar, *Sabina 096*, dated October 06, 2010.

DISCUSSION

Wild plants have always played a crucial role with respect to meeting nutritional needs. Vegetables are eaten twice a day in Nepalese cuisine, most often with rice or another cereal, and a legume/pulse for protein (*daal*). Wild fruits and vegetables are not consumed in large quantities but their role in local communities cannot be ignored. During our interviews, it was found that wild fruits are thought to be a good source of nutrients and are also popular because of their low cost and easy availability. There is often opportunity to market them commercially, to benefit both local health and local economy.

The present study documented significantly more wild food plants than the previous authors. Bhattarai et al. (2009) reported 41 species of wild food plants collected from the Gurung communities in the Manang district, central Nepal. Possible reasons for that low number of wild vegetables are the high altitude in Manang (above 3,000 m a.m.s.l.) and consequently low diversity of natural vegetation in that region, which is dominated by grasslands.

Mostly used vegetables by the local community of SNNP area are *Amaranthus spinosus*, *Dysphania ambrosioides*, *Dendrocalamus strictus*, *Dioscorea bulbifera*, *Dioscorea deltoidea*, *Dryopteris carolinhopei*, *Polystichum squarrosus* and *Urtica dioica*. Similarly, the most used fruits are *Berberis asiatica*, *Berberis chitria*, *Myrica esculenta*, *Castanopsis indica*, *Castanopsis tribuloides*, *Rubus acuminatus*, *Rubus ellipticus* and *Rubus paniculatus*. Many of these fruits and vegetables also have high market value. Plants highly used as pickles and spices are *Cannabis sativa*, *Mentha spicata* and *Zanthoxylum armatum*. Plants used for liquor preparation are *Duhaldea cappa* and *Eschenbachia japonica*. Both of them are highly used in fermenting rice or finger-millet (*Eleusine coracana*) to prepare local beer. A common belief there is that they think millet beer gives them strength. So, instead of tea, every morning, they drink millet beer.

CONCLUSION

Present investigation has revealed that the local communities of SNNP are rich in traditional knowledge related to use, harvest and collection of the wild food plant resources. The locals feel that the vitamins and minerals found in wild plants are important to children for their better growth and physical development. Wild foods also supplement the diet of elderly people who are often frail and more susceptible to diseases. In addition to dietary benefits,

such uses of wild plant resources can be linked to the preservation of biodiversity and alleviation of poverty. Present report has conferred scope for the nutritional and phytochemical analysis of those biochemically unexplored wild edible species to unveil their nutritional and nutraceutical potentials for food and medical applications.

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