Ethnobotanical Studies on Some Lower Plants of the Central Development Region, Nepal

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Abstract

Forty-eight lower plants used by the local communities of the villages of the Central Development Region, Nepal are reported based on a field survey. Local people have remarkable detailed knowledge of species identity, characteristics and their specific uses. At present, some species are under serious threat due to habitat destruction and over exploitation indicating urgent need of documentation and conservation of the useful plants and their habitats.

Keywords: Lower plants, mushrooms, pteridophytes, traditional knowledge, conservation.

Introduction

The Central Development Region of Nepal are phytogeographically a diverse terrain and very rich in biodiversity and offers immense scope for ethnobotanical studies. In spite of the fast modernization process, the local communities of these areas still hold on to their traditional faith and depend on indigenous plants for their various domestic needs and traditional medicine. However, at present, the useful plants and their ethno-information are being eroded as a result of loss or degraded of appropriate habitats of the plants, unsustainable land use activities and over-exploitation of natural resources. Hence priority should be given to document the useful plants and their uses along with local knowledge and practices before these plants are eliminated from the areas. During the ethnobotanical survey of Nepal, an attempt has been made to document the useful lower plants with existing traditional practices which are being used by various tribes of the villages and surrounding areas of the region. Although some works related to the ethnobotany of the region have already been carried out by Bhandary and Shrestha, (1982, 1999); Bista et al., (2002); Chaudhary, (1994); Dangol and Gurung, (1999); Gurung, (1999); Joshi, (1988, 1992); Joshi and Edington, (1990); Joshi and Joshi (2000, 2003, 2005, 2005a &b); Joshi et al., (1996, 2003); Joshi, K. (1991, 1996, 2000, 2003 7 b, 2004, 2005); and Manandhar (2002), the vast store of ethnobotanical information of lower plants with traditional knowledge and practices have still not been comprehensively documented. In the present paper, an attempt has been made to enumerate the useful lower plants with indigenous uses.

Materials and Methods
The ethnobotanical study was carried out in the villages and surrounding areas of the Sundarijal, Mahakal, Okharni, Mulkhadka, Tokha, Nagarjun, Nagarkot, Suryabinayak, Nala, Bajrajogini, Changu, Phulchoki, Godavari, Lele, of Kathmandu valley and Kakani, Thansing, Talakhu, Matragau, Thanapati, Likhu of Nuwakot district and Syabru of Rasuwa district. Several field trips in and around the study areas were undertaken during the years 2005 to 2007 with a view to document the indigenous practices and uses of plant resources. Ethnobotanical information was gathered mainly through repeated interview and open-ended participatory discussions with local informants, such as traditional healers / “jkankri”, teachers and experienced village elders including midwives and by direct observations on the way different plant materials were being collected and used (Joshi and Edington, 1990). Voucher specimens are deposited in the office of Biodiversity Management Programme (BMP), Environmental Management Action (EMA) Group, Kathmandu, Nepal.

Results

During the field survey, ethnobotanical information of 48 species of plants have been collected from various habitats of the study areas. In the following enumeration, the species are arranged alphabetically in two groups (Mushrooms and Pteridophytes), Botanical name followed Nepalese name (Nep.), uses and habitat. Among the documented species, 41 species were used as food and 9 species for treatment of diseases, 1 species for fuel and 1 species for mulching. Though these species are distributed in various habitats, most of the species are mainly confined to the forests.

Enumeration of Species

Mushrooms

*Amanita caesarea* (Scop. ex Fr.) Pers. ex Schw.
Nep. Salla chyau; Suntale chyau; Dhar shyamo; Phul chyau
Uses: edible, use in culinary purpose, mostly preferred by Tamang community. It is also sold in Asan market, Kathmandu with *Amanita hemibapha*.
Habitat: Moist places, dominantly found in the pine forest, Nagarkot and Tokha, Kathmandu valley.

*Amanita hemibapha* (Berk. et Br.) Sacc. subsp. *hemibapha* Corner & Bas.
Nep. Dhar shyamo, Suntale chyau, Phul chyau
Use: whole aerial parts are eaten as vegetables. It is also sold in Kathmandu market mixed with *Amanita caesarea*, *Amanita hemibapha* subsp. *similis* and *Aminata hamibapha* subsp. *javanica*.
Habitat: moist shady places of pine forest, Nagarkot.

*Amanita hemibapha* (Berk. et Br.) Sacc. subsp. *Javanica* Corner & Bas.
Nep. Dhar shyamo
Use: edible. It is also sold mixed with *Amanita caesarea*, *Amanita hemibapha* var. *hemibapha* in market.
Habitat: moist soil in pine forest, Nagarkot

*Amanita hemibapha* (Berk. et Br.) Sacc. Subsp. *similis*
Nep. Dhar shyamo.
Use: edible. It is also sold in Kathmandu market (Asan) with *Amanita hemibapha* subsp. *hemibapha*.
Habitat: moist soil in pine forest, Nagarkot
**Auricularia auricula** (Hook.) Underwood  
Nep. Kane chyau; Mushkane chyau; Naryang shyamo, Chiple chyau  
Use: edible, few people used for culinary purpose.  
Habitat: rotten stump of *Gravelia robusta*, Nagarjun, Kathmandu

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**Boletus edulis** Bull ex Fr.  
Nep. Pho shyamo  
Use: edible, mostly used by Tamang community.  
Habitat: moist shady places in mixed forest, Suryavinayak

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**Cantharellus cibarius** Fr.  
Nep. Ura shyamo; Kukhure Ko phul chyau  
Use: edible. It is also sold in Asan market, Kathmandu  
Habitat: moist places in mixed forests of pine and other deciduous trees, Sundarijal

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**Cantharellus subalbidus** Fr.  
Nep. Ura shyamo, Kurkure chyau  
Use: edible. It is also sold in Asan market, Kathmandu  
Habitat: moist places of mixed forests, Sundarijal

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**Cantharellus tubiformis** Fr.  
Nep. Budhi chyau  
Use: edible  
Habitat: moist places of mixed forests, Sundarijal

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**Clavaria cristata** (Holmsk) Pers  
Nep. Thokre chyau; Thakre chyau  
Use: edible. It is also sold in Asan market, Kathmandu  
Habitat: moist places of mixed forests, Suryavinayak and Nala.

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**Clavulina cinera** (Fr.) Corner  
Use: edible/ It is also sold in market with *Laccaria laccata*, Kathmandu  
Habitat: moist places in mixed forest, Suryavinayak and Nala.

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**Craterellus cornucopoides** (L. ex. Fr.) Pers  
Use: edible. It is also sold in Tarkari market, Daubahal with *Cantharellus cibarius*,  
Habitat: moist places, Godavari.

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**Grifola frondosa** (Dick ex Fr.) S.F. Gray  
Nep: Sulshing marmo, Nagroom, Bhalu chyau  
Use: edible. It is also sold in Sundarijal market,  
Habitat: moist places in mixed forests, Sundarijal and Lele.

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**Hericium erinaceus** (Bull) Pers.  
Nep. Thokre chyau; Thankar shyamo.  
Use: edible. It is sold in Ashan market, Kathmandu

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**Hydnum repandum** L.  
Nep. Chwali shyamo, Ura shyamo, Chwali ura shyamo.  
Use: edible, sometime eaten raw, preferred by Tamang community.  
Habitat: moist places covered with pine litter, pine forest, Tokha
Laccaria laccata (Scop. ex Fr.) Berk & Br.
   Nep. Budhi chyau; Jhari chyau, Kurkure chyau, Bhuinbapale chyau, Chinmrukan
   Use: edible, mostly preferred by Tamang and Newar ethnic cast. It is also sold in Kathmandu market
   Habitat: moist shady and open places in Pinus roxburghii forest and in mixed forest, Tokha, Sundarijal, Lele, Bajrayogini and Suryavinayak.

Lactarius piperatus (Fr.) S.F. Gray
   Nep. Dudhe chyau, Nghe shyamo
   Use: edible, but not preferred.
   Habitat: pine forest, Nagarkot

Laetiporus sulphureus (Fr.) Murr
   Nep. Wala shyamo; Sulsingwala marmo
   Use: edible. It is also sold in Asan market.
   Habitat: moist places, Sundarijal.

Lentinellus sp
   Use: edible. It is also sold in Kathmandu market with Pleurotus cornucopiae.
   Habitat: forest, Tokha.

Lycoperdon pyriforme Schaeffer ex Fr.
   Nep. Phusphere chyau; Nagala Phum shyamo.
   Use: edible;
   Habitat: moist places in mixed tropical forests, Kakani and Changu.

Meripilus giganteus (Fr.) Karst
   Nep. Bhalu Chyau
   Use: edible
   Habitat: Quercus stump, Phulchoki

Oudemansiella radicate (Rehl ex Fr.) Singer
   Nep. Kagkhutte chyau, Tang shyamo
   Use: edible, roasted on fire or fried with various things.
   Habitat: soil in open moist places, Suryavinayak, Lele and Kakani.

Pleurotus cornucopiae (Paul ex Pers) Rolland
   Use: edible. The mushrooms are sold in Asan market, Kathmandu and Mangal Bazar, Patan,

Pleurotus pulmonarius (Fr.) Quel
   Nep. Kande chyau
   Use: edible. It is sold in Kathmandu market, mixed with Pleurotus conucopiae and Lentinellus spp.,

Polyporus arcularius Fr.
   Use: edible. It is also sold at Asan market, Kathmandu
   Habitat: moist places of forest, Phulchowki

Polyporus varius Fr.
   Use: edible.
This species is sold in Kathmandu Market

*Ramaria aurea* (Fr.) Quel.
- Nep. Thakre chyau
- Use: edible. It is also sold in Kathmandu market
- Habitat: moist places of pine forests, Nagarkot and Lele.

*Ramaria botrytis* (Pers.) Ricken
- Nep. Thekre chyau
- Use: edible. It is also sold at Asan market, Kathmandu
- Habitat: soil in moist places in pine forest, Kakani.

*Ramaria flava* (Fr.) Quel
- Nep. Thokre chyau
- Use: edible. It is also sold at Kathmandu market.
- Habitat: soil in pine forest, Kakani.

*Ramaria formosa* (Fr.) Quel.
- Nep. Thokre chyau
- Use: edible.
- Habitat: It is sold at Asan market mixed with *Ramaria aurea* and *Ramaria flava*.

*Russula adusta* Fr.
- Nep. Kan shyamo
- Use: edible, but poor in taste.
- Habitat: moist shady places in pine forest or in mixed forests, Lele, Nagarkot, Bajrayogine and Matatirtha.

*Russula densifolia* Gill
- Use: edible, but poor in taste.
- Habitat: moist shady places in pine forests, Bajrayogine, Lele and Suryavinayak.

*Scleroderma citrinum* Pers
- Use: edible. It is also sold in Asan market, Kathmandu.
- Habitat: soil in moist places of the mixed forest, Matatirtha, Sundarijal and Changu.

*Termitomyces eurhizus* (Berk) Heim
- Nep. Kalunge chyau, Puchina, Jhyarno, Chyarno, Kalunge
- Use: edible, aerial parts are eaten after roasted. It is also sold in Kathmandu market.
- Habitat: moist soil in pine forest as well as in mixed forests, Nagarkot, and Kakani.

**Pteridophytes**

*Adiantum Capillus veneris* (Linn.) Adiantaceae
- Nep. Rani uneu
- Use: A paste made from the fronds is applied to the forehead to relieve
headaches and to the chest to relieve chest pains; decoction of plant is drunk to treat whooping cough and throat and bronchial disorders; squeezed leaf juice is applied on wounds.

Habitat: stone crevices and rocky slopes, Kakani

**Adiantum caudatum** L. Adiantaceae

Nep. Uneu

Use: Green leaves are pounded in water and juice is applied to the affected area of skin infection; dried leaf is decocted and then drunk to treat cough and fever; leaf juice is taken to cure diabetes.

Habitat: stone crevices and rocky slopes, Kakani and Talakhu of Nuwakot district.

**Adiantum incisum** Forssk, Adiantaceae

Nep. Uneu

Use: Frond is squeezed between thumb and then juice is applied externally to cure scabies.

Habitat: Forests, Matragau, Nuwakot district.

**Diplazium stoliczkae** Bedd. Aspidiaceae

Nep. Kalo neuro

Use: The tender shoots are commonly eaten as delicious vegetable.

Habitat: Forest, Kakani and Syabru

**Deparia boryana** (Willd.) M. Kato., Woodsiaceae

Nep. Kaloneuro

Use: Young parts are eaten as vegetable.

Habitat: Forest, Thanapati

**Dryopteris cochleata** (D. Don.) C. Chr. Aspidiaceae

Nep. Dantheneuro

Use: The tender shoots are consumed as vegetable after boiling and are used to sell in market; juice extracted from the fronds is used to treat muscular and rheumatic pain.

Habitat: Forest, waste moist areas, Thansing, Kakani, Mulkhadka, Okharni and adjoining areas

**Dryothyrium boryanum** (Willd.) Ching., Aspidiaceae

Nep. Kaloneuro

Use: The young parts are eaten as vegetable.

Habitat: Forest, Sundarijal

**Equisetum debile** Roxb. ex Vaucher, Equisetaceae

Nep. Ankhe jhar, kurkure

Use: Plants are pounded and paste is then applied in bone facture and also used to cure old ulcers.

Habitat: stagnant water, shady moist areas, Kakani and Likhu, Nuwakot district

**Geleichenia gigantea** Wall ex Hook & Bauer. Gleicheniaceae

Use: Frond is used as fuel and mulching.

Habitat: Profoundly occur on dry exposed areas, Thansing

**Lycopodium clavatum** L. Lycopodiaceae,

Nep. Nagbeli jhar;

Use: decoction of shoot is drunk three times a day for stomach ache; spores are used to treat cuts and wounds; plant decoction is used in rheumatism.

Habitat: forest, exposed slopes, Okharni, Mulkhadka and Thansing
Neprolepis cordifolia (L.) Presl. Davalliaceae  
Nep. Pani-amala, Pani saro  
Use: Fleshy tubers are eaten by village children. Herb is used against cough and skin diseases; water bulbs are taken to cure Leocorhea.  
Habitat: Shady or dry open places, Kakani and Syabru.

Polystichum squarrosum (D. Don) Fee. Aspidiaceae  
Nep. Phusre neuro, Bhyagnte neuro, Thulo neuro  
Use: Tender shoots are consumed.  
Habitat: Shady as well as exposed parts of the forest, Mahakal and Syabru,

Pteridium aquilinum (L) Kuhn. Dennstaedtiaceae  
Nep. Uneu  
Use: Young frond is eaten as vegetable; Decoction of rhizome is used for the treatment of spleen.  
Habitat: Exposed area, moist places, Kakani

Selaginella biformis A. Br. ex Kuhn. Selaginellaceae  
Nep. Sindure  
Use: Powder of strobilus is applied on cuts and wounds to stop bleeding;  
Habitat: shady slopes, riversides, Kakani.

Discussion  
The present study revealed that wild plants are widely used to fulfill basic needs and for therapeutic purposes in the villages of the Central Development Region. Ramaria aurea and Ramaria flava are considered as nonedible species in Japan (Imazeki et al. 1988), but they are used as vegetable in Kathmandu valley (Joshi and Joshi, 1999). The local inhabitants of the study areas have developed a traditional knowledge system related to utilisation of plant resources in a sustainable manner. Especially, women have significant knowledge regarding usefulness of the plants and their parts. But when questioned about the changing status of the existing plants, our respondents listed some important species such as Auricularia auricula and Cantharellus cibarius which have also declined in abundance during the last decade. Hence, efforts should be directed to conserve the valuable species and their habitats with the implementation of locally appropriate sustainable management measures involving local participation.

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References  


