

ETHNO-MEDICINAL USES OF PLANTS IN PUTALI BAZAR MUNICIPALITY OF SYANGJA DISTRICT, NEPAL

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ABSTRACT

In the several rural areas of Nepal, due to lack of modern health facilities, people still rely on traditional medicine practice. This present research seeks to explore the information of medicinal plants used by the people of Putalibazar municipality of Syangja district. In total of 108 plants species belonging to 100 genera and 60 families were recorded as ethno medicinal plants of Putalibazar Municipality. In which dominant families were Poaceae, Fabaceae, Moraceae, Asteraceae, Lamiaceae, and Euphorbiaceae respectively with 7, 6, 5, 5 and 4 genera. On the basis of their habit, the plants species were climbers 7 spp. (6.48%), herbs 48 spp. (44.44%), shrubs 24 spp. (21.82%) and trees 29 spp. (26.85%). Some of the useful species are under the serious threat due to unsustainable activities. Hence, a proper documentation of useful plants with their present status and local traditional knowledge as well as practices is urgently needed. Effort should also be initiated to implement appropriate conservation measures for preservation and sustainable uses of these useful plants.

Key words: Conservation, disease, ethno-medicine, traditional medicine.

INTRODUCTION

Nepal is the natural botanical garden of floristic biodiversity in the world, because of its geographical, ecological, altitudinal and climatic variations. Despite being small country on the basis of land area, Nepal is fully rich on the basis of bio-diversity with no doubt. The country is the shelter to a large number of medicinal plants which are used as major source of treatment for different kinds of diseases, mainly in rural areas where allopathic treatment is lacking. It has been estimated that approximately 80% of the developing world rely on traditional medicine and 85% of the traditional medicines contain plants and their extract (Sheldon *et al.*, 1997).

In Nepal about 70-80% of population in mountain region depends on the traditional medicines for health care (Manandhar, 1980) and in spite of wide spread use of allopathic

medicine, more than 80% of the rural Nepalese people rely on traditional remedies that involve the use of local plants in various forms and combinations (Rajbhandari and Bajracharya, 1994).

Nepal is a multiethnic and multilingual country and has about 130 different ethnic groups speaking about 120 languages (CBS, 2013). In Nepal, about 80% of the people, mainly of the rural communities, depend on herbal plants as medicine for their primary health care (Ghimire *et al.*, 2000).

Recently updated database revealed a total of 1950 species of medicinal plants used in Nepal and out of which 1906 species are identified under vascular group, comprising 1614 native, 192 introduced or cultivated and 100 naturalized taxa (Ghimire, 2008). According to Bhattarai and Ghimire (2006), 49% of traditional

medicinal plants are herbs, 29% trees, 14% shrubs and 9% climbers. In Nepal, it is reported that traditional healers use 1792 plant species as medicine (Baral and Kurmi, 2006). During the last few decades, there has been an increasing interest in the study of the medicinal plants and their traditional use in different part of the world (Lev, 2006). Documenting the indigenous knowledge through ethno-botanical studies is important for the conservation and utilization of biological resources, and also for future references (Sen, 1993).

In Nepal, because of the rural nature of the country, modern health services and other organized systems of traditional medicine are not available to the bulk of the population. Indigenous knowledge about the use of plants as medicine remains the foundation of primary healthcare in most of the remote parts of Nepal. The majority of Nepal's population rely on traditional herbal therapy as it is cheap, convenient and readily available (Manandhar, 2002). Traditional botanical knowledge of the indigenous communities relating to uses and management of wild plant resources is extensive (Cotton, 1997).

MATERIALS AND METHODS

Study area

The study was conducted in Putalibazar Municipality, Syangja. Putalibazar is the biggest municipality in Syangja district. It was established on 2054 B.S. by merging the five village development committees i.e. Putlikhet, Karendada, Chandikalika, Satupasal and Ganeshpur. It covers an area 146.21 km². It consists mainly the hills and small plateau. The area has a temperate monsoon climate with four different seasons; winter, spring, summer and monsoon.

The present study was conducted over a period of a year between 2016 and 2017.

Method of selecting information depends on the distribution of local people having folk knowledge. Generally, elderly people were given top priority. They were requested to collect specimen of the plants species on site. Those informants were traditional healers themselves or had tradition of healing in their families and had knowledge of the medicinal use of plants. The wealth of medicinal plant knowledge among the people of this area is based on beliefs and observations. The ethno medicinal data were collected through interviews with traditional healers, and observation of plant specimens.

Results and Discussion

During the field survey, ethno-medicinal information of 60 plant families belonging to 100 genera and 108 species were identified. Plant species which are used in traditional medicine are enumerated with their botanical name followed by local name, family and the use of plants parts in the treatment of various diseases. In the present investigation, all the medicinal plants were identified and their number of families (60), genus (98) and species (110) were identified. (Table 1)

Altogether 108 species of medicinal plants, which were identified on the basis of their habit. Among them 44.44% were herbs, 22.23% shrubs, 26.85% trees and 6.48% climbers. Different parts of the medicinal plant used by the people of this area are bark, bud, flower, fruit, latex/ gum, leaves, rhizome, root, seed and whole plant.

Among these parts used for the preparation of medicine, roots of 26 species of plant were found to be most frequently used followed by all part of the plant. i.e. leaves (23 species), buds (19 species), whole plant (13 species), fruit (13 species), seed (10 species), bark (9 species), rhizome (8 species), flower (8 species), latex (6 species) and stem (5 species) of plants.

In the present ethno-medico-botanical survey,

a total of 108 species under 98 genera of 60 families which are used for the treatment of different diseases were documented. Similar findings were reported by Manandhar (1980). The recorded ethno-medicinal plants were used in treatment of various diseases such as cuts and wounds, skin diseases, fever, catarrh, boils, burns, scabies, dogs and insect bites, ringworm, ulcers, allergy, pimples, leukoderma, cholera, diarrhea, dysentery, headache, gastritis etc. Majority of the plants species described in the present investigation frequently used by the people of this area are *Tinospora cordifolia*, *Centella asiatica*, *Eclipta prostrata*, *Mimosa pudica*, *Ocimum sanctum*, *Bahunia purpurea*, *Magnifera indica*, *Azadiracta indica*, *Aloe vera*, *Acorus calamus* and *Zingiber officinale*. Similar findings were reported by

In the present investigation, the dominated families of the medicinal plants on the basis of their uses are Poaceae (7 spp.), followed by Fabaceae (6 spp.), Moraceae (5 spp.) and

Compositae, Euphorbiaceae and Lamiaceae 4 species each. The frequently used plants part for medicinal values, used in present study is root (26 spp.), followed by leaves (23 species), buds (19 species), whole part (13 species), fruit (13 species), seed (10 species), bark (9 species), rhizome (8 species), flower (8 species), latex (6 species) and stem (5 species) of plants. Among the recorded species, herbs (44.55%) were found to be dominating over trees (27.27%), shrubs (21.82%) and 6.36% climbers. The present study emphasized that there is a profound and growing knowledge gap between old and younger generation. People of more than 50 years' age know a lot about wild plant product as compared to younger generation. Our society is changing gradually and their economic status also changing. Government has established some healthcare centre in the rural area. This may gradually change the existing pattern of indigenous knowledge system of healthcare

Table 1: Enumerated list of medicinal plants

| Botanical Name | Common name | Family | Parts used |
|--|--------------|----------------|-------------------|
| <i>Abelmoschus esculantus</i> (Linnaceus) Moench | Vindi | Malvaceae | Whole plant |
| <i>Abies spectabilis</i> (D.Don) Mirbel | Salla | Pinaceae | Leaves |
| <i>Achyranthus aspera</i> L. | Datiwan | Amaranthaceae | Root, stem |
| <i>Acorus calamus</i> Linn. | Bojho | Araceae | Rhizome |
| <i>Adhatoda vasica</i> Nees. | Asuro | Acanthaceae | Root, bud |
| <i>Aegle marmelos</i> (L.) Corr | Bel | Rutaceae | Fruit |
| <i>Agave cantala</i> (Roxburgh.ex.Salmodyck) | Ketuki | Agavaceae | Root, leaves |
| <i>Ageratum houstonianum</i> Miller. | Nilo gandhe | Compositae | Leaves |
| <i>Allium cepa</i> L. | Pyazz | Amaryllidaceae | Rhizome |
| <i>Aloe vera</i> (L.) Burm.F. | Gheukumari | Asphodelaceae | Whole plant |
| <i>Amaranthus viridis</i> L. | Seto lunde | Amaranthaceae | Leaves |
| <i>Amomum aromaticum</i> Roxb. | Alainchi | Typhaceae | Seed |
| <i>Ananas comosus</i> (L.) Merr. | Darae | Bromilaceae | Fruit, leaves |
| <i>Artemisia capillaris</i> thumb. | Tite pati | Compositae | Leaves |
| <i>Artocarpus heterophyllus</i> Lamark. | Rukh katahar | Moraceae | Root, latex, seed |

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|---|-------------------|-----------------|----------------|
| <i>Artocarpus lakoocha</i> Wallich. Ex.Roxburghii | Badahar | Moraceae | Bark |
| <i>Asparagus racemosus</i> Willd. | Kurilo | Asparagaceae | Root |
| <i>Aspidium caryotideum</i> Wall.ex. Hook .andGrev | Kali neuro | Dryopteridaceae | Leaves |
| <i>Azadiracta indica</i> A. Juss. | Neem | Meliaceae | Leaves |
| <i>Bahunia purpurea</i> L. | Taki | Fabaceae | Root, flower |
| <i>Berberis aristata</i> DC. | Chutro | Berberidaceae | Root, bark |
| <i>Butea monosperma</i> Lam. Taub | Palash | Fabaceae | Latex, flower |
| <i>Cajanas cajan</i> (L.) mill.sp | Arhar | Fabaceae | Bud |
| <i>Callicarpa macrophylla</i> vahl. | Daedalo | Verbenaceae | Root, fruit |
| <i>Calotropis gigantia</i> (L.) W.T.Aiton | Aank | Asclepiadaceae | Latex, leaves |
| <i>Cannabis sativa</i> L. | Ganja | Cannabaceae | Leaves |
| <i>Capsicum annum</i> L. | Akabare khursani | Solanaceae | Fruit |
| <i>Carica papaya</i> L. | Mewa | Caricaceae | Latex |
| <i>Cassia tora</i> L. | Tapre | Fabaceae | Seed |
| <i>Castonopsis indica</i> Roxb. Ex. Lindl. | Kadus | Fagaceae | Bud |
| <i>Catharanthus roseus</i> (L.) G Don,1837 | Sadabahar | Apocynaceae | Bud |
| <i>Celosia argentea</i> L. | Sahasra jari | Amaranthaceae | Root |
| <i>Centella asiatica</i> (L.) | Ghodtapre | Umbelliferae | Whole plant |
| <i>Chenopodium album</i> L. | Bethe | Chenopodiaceae | Flower, leaves |
| <i>Choerospondias axillaris</i> (Roxb.) B.L. Burtt. and A.W. Hill. | Lapsi | Anacardiaceae | Fruit |
| <i>Cinnamomum tamala</i> Nees and Eberm. | Tejpaat | Lauraceae | Leaves , bark |
| <i>Circium arvense</i> (L.) Scop. | Thakailo | Asteraceae | Bud |
| <i>Cissampelos pareira</i> L. | Gudargano | Menispermaceae | Rhizome |
| <i>Citrus aurantifolia</i> (Christm.) Swingle | Kagati | Rutaceae | Fruit |
| <i>Cleistocalyx operculatus</i> (Roxburgh). Murrey and Perry. | Kyamuno | Myrtaceae | Bark, leaves |
| <i>Coffea arabica</i> L. | Kafi | Rubiaceae | Seed |
| <i>Colocasia esculanta</i> (L.) Schott | Gaabha | Araceae | Root |
| <i>Colocasia fallax</i> Schott | Jaluko | Araceae | Bud |
| <i>Crateva religiosa</i> Forst. F | Siplikan | Capperaceae | Bud |
| <i>Curculigo orchiodes</i> Geertn. | Kalo musli | Hypoxidaceae | Root |
| <i>Curcuma caesia</i> Roxb | Kalo haledo | Zinziperaceae | Rhizome |
| <i>Cuscuta europaea</i> L. | Aakashbeli lahara | Convolvulaceae | Whole plant |
| <i>Cynodon dactylon</i> (L.) Pers. | Dubo | Poaceae | Whole plant |

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|--|----------------------------|------------------|-----------------------|
| <i>Dendrocalamus hemiltonii</i> Gamble | Baans | Poaceae | Young stem |
| <i>Desmostachya bipinnata</i> (L.) Stapf. | Kush | Poaceae | Root |
| <i>Drymaria cordata</i> L. Willd. ex. R and S | Avijalo | Caryophyllaceae | Whole plant |
| <i>Drynaria propinqua</i> (wall.exmett) J. Smith | B a n g a d i (kammari) | Polypodiaceae | Rhizome |
| <i>Eclipta prostrata</i> (L.) L. | Bhringe jhar | Compositae | Whole plant |
| <i>Elaeocarpus ganitrus</i> Roxb.ex.G.Don | Rudrakxya | Tiliaceae | Seed |
| <i>Euphorbia pulcherrima</i> Willd. Ex.klotzsch | Lalupate | Euphorbiaceae | Latex, leaves |
| <i>Euphorbia royleana</i> Boiss. | Siudi | Euphorbiaceae | Latex |
| <i>Ficus racemosa</i> L. | Dumri | Moraceae | Bark |
| <i>Ficus religiosa</i> L. | Pipal | Moraceae | Bud |
| <i>Fritillaria cirrhosa</i> D.Don | Ban lasun | Liliaceae | Rhizome |
| <i>Glycin max</i> (L.) Merr | Bhatmas | Fabaceae | Seed |
| <i>Gossypium arboretum</i> L. | Kapaas | Malvaceae | Seed, root |
| <i>Hibiscus rosa-sinensis</i> L. | Ghantiphool | Malvaceae | Leaves, flowers |
| <i>Imperata cylindrica</i> L. | Siru | Poaceae | Root |
| <i>Jatropha curcus</i> L. | Sajiwan | Euphorbiaceae | Root, stem |
| <i>Juniperus indica</i> . Bertol | Dhupi | Cupressaceae | Wood, seed |
| <i>Leersia hexandra</i> Sw. | Karante jhar | Poaceae | Whole plant |
| <i>Lyonia ovalifolia</i> (Wall.) Drude | Angeri | Ericaceae | Bud |
| <i>Magnifera indica</i> L. | Aanp | Anacardiaceae | Bark |
| <i>Mentha longifolia</i> L. Huds. | Vicks | Lamiaceae | Leaves, bud |
| <i>Mentha piperita</i> L. | Pudina | Lamiaceae | Whole plant |
| <i>Mimosa pudica</i> L. | Lajjawati | Fabaceae | Bud |
| <i>Mirabilis jalapa</i> L. | Malati phool | Nyctaginaceae | Root |
| <i>Morus australis</i> Poir. | Kew kaphal | Moraceae | Leaves, root |
| <i>Muklia scabrella</i> (L.f) Arn. | Golkakri | Cucurbitaceae | Root, leaves |
| <i>Musa paradisiaca</i> L. | Kera | Musaceae | Root, stem, leaves |
| <i>Mussaendra roxburghii</i> L. | Dhobini | Rubiaceae | Bud , root |
| <i>Nephrolepis cordifolia</i> (L.) K. Persl. | Pani amala | Nephrolepidaceae | Root |
| <i>Nyctanthes arbor-tristis</i> L. | Parijat | Oleaceae | Leaves |
| <i>Ocimum sanctum</i> L. | Tulsi | Lamiaceae | Leaves |
| <i>Oroxylum indicum</i> (L.) Benth. Ex Kurz | Tatelo | Bignoniaceae | Seed, root |
| <i>Oxalis corniculata</i> L. | Chariamilo | Oxalidiaceae | Whole plant |
| <i>Phyllanthus emblica</i> L. | Amala | Euphorbiaceae | Fruit |

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|--|--------------------------|----------------|-------------------|
| <i>Piper longum</i> Linn. | Pipla | Piperaceae | Fruits |
| <i>Pityrogramma calomelanas</i> (L.) link. | Kali sinki (dankerno) | Pteridaceae | Leaves |
| <i>Pogostemon amarantoides</i> Benth. | Rudilo | Lamiacea | Bud |
| <i>Prunus persica</i> (L.) Batsch | Aaru | Rosaceae | Bark, fruit |
| <i>Psidium guajava</i> L. | Belauti | Myrtaceae | Bud |
| <i>Rhaphidophora glauca</i> (wall.) Schott. | Haddijor | Araceae | Whole plant |
| <i>Rhododendron arboretum</i> smith. | Laligurans | Ericaceae | Bud, flower, bark |
| <i>Rhus insignis</i> Hook. F | Bhalayo | Anacardiaceae | Fruit |
| <i>Rosa alba</i> L. | Gulaaf | Rosaceae | Flower |
| <i>Rubus ellipticus</i> sm. | Aenselu | Rosaceae | Bud |
| <i>Saccharum arundianacum</i> Retz. | Ukhu | Poaceae | Roots |
| <i>Schefflers venulosa</i> Harms | Kursimlo | Araliaceae | Bark |
| <i>Solanum nigrum</i> L. | Kaligedi | Solanaceae | Fruit |
| <i>Solanum xanthocarpum</i> L. | Kanthakari | Solanaceae | Whole plant |
| <i>Stephania elegans</i> .Hook.F andThoms | Batulpate | Menispermiceae | Rhizome |
| <i>Tegetes erecta</i> L. | Sayapatri | Compositae | Flower, leaves |
| <i>Terminalia belerica</i> Roxb. | Barro | Combretaceae | Fruit,bark |
| <i>Terminalia chebula</i> Retz. | Harro | Combretaceae | Fruit |
| <i>Thysanolaena latifolia</i> (Roxb.ex.Hornem.) Honda | Amriso | Poaceae | Root |
| <i>Tinospora cordifolia</i> (Thunb.) Miers | Gurjo | Menispermaceae | Whole plant |
| <i>Urtica dioica</i> L. | Sisnu | Urticaceae | Bud |
| <i>Vitex negundo</i> L. | Simali | Verbenaceae | Leaves |
| <i>Woodfordia fruticos</i> (L.) Kurz. | Dhaero | Lythraceae | Bud, flower |
| <i>Zanthoxylum armatum</i> DC. | Timur | Rutaceae | Seed |
| <i>Zingiber officinale</i> Rose. | Adhuwa | Zinziberaceae | Rhizome |
| <i>Zizypus jujube</i> Mill. | Bayer | Rhamnaceae | Root |

Conclusions

Most of the inhabitants of Putali Bazar Municipality areas still practice traditional knowledge of medicinal plants. This reveals that the local people possesses good knowledge of herbal medicine but as people are going on modernization their knowledge of traditional uses of the plants may be lost in due course. So,

it is important to study and keep records of the uses of plants by different tribes for studies on scientific basis and this traditional knowledge have to pass from generation to generation for the future preservation.

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