Indigenous Medicinal Knowledge of Medicinal Plants of Barnala area, District Bhimber, Pakistan

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Abstract: This survey was aimed to collect the traditional knowledge of medicinal plants used by the local community of Barnal area, district Bhimber, Pakistan. A total 32 plant species belonging to 17 families were reported, as medicinally valuable among all the survived plant species and data is presented here. It is concluded that local authorities and other funding agencies should promote the conservation of this natural resource of indigenous plants with the help of local people; otherwise this treasure is in danger to lose.

Keywords: Ethnomedicines; Barnala; Traditional knowledge; Medicinal plants.

Introduction

Man has cultured the tradition of observing plants for thousands of years and had used them for various purposes. Botany, in turn, originated in part from an attention in discovering plants to help fight illness. In fact, medicine and botany have always had close ties (Mahmood et al. 2011).

The term ethnobotany was first used by an American Botanist Harshberger in 1895; study of plants used by ancient and aboriginal people. Later, Jones (1941) and Ford (1978) polished ethnobotany by using current ecological term. According to Pie (1995), it is the study of direct relations between human and plant population through its culture. They also learn the use of plants impresses same precincts on them. These mixture-interactions are called ethnobotany. It promotes traditional culture, local remedies, forest management practices and tradition knowledge transformation to next generation. It improves self-confidence of minorities and enhances their social and cultural values (Qureshi et al. 2003).

Traditional medicines have been defined as a sum of the knowledge, skills and practices based on theories, beliefs and experiences indigenous to different culture, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness (Mahmood et al. 2011c). In many developing countries, a large part of the population, especially in the rural areas depends mainly in traditional medicines for their primary health care.

Various botanists worked to explore the indigenous knowledge of AJK. Shahad and Qureshi (2001) investigated 31 plant species belonging to 18 families from Jatlan area, Mirpur, AJK, Pakistan. Mahmood et al. explored the 38 plants of 22 families from district Bhimber, AJK, Pakistan. The present research survey was conducted to save the indigenous knowledge of Neelum valley, AJK, Pakistan, as modernization is a big threat to this treasure (Mahmood et al. 2011). Present research survey was aimed to understand the indigenous knowledge system, status of Medicinal Herbs, to identify the role of people in the conservation & development of agroforestry, the dependency of local people on medicinal plants and to understand Traditional
knowledge about Medicinal Plants among the villagers of district Bhimber, Pakistan.

Materials and methods

The methodology was based on interviews using checklist and questionnaires of information. The interviewees in the villages were chosen at random. Total number of interviews conducted, were 135 (80 males and 55 females). The interviewers were mainly Government employees and Government servants, who were enough educated. Additionally, landholders (Zamindars), Agriculturists, Pansars, Hakims and Farmers were also interviewed. In the first step, detailed knowledge about the local and indigenous people was collected. A regional study on the epidemiology, traditional medicines and ecology of the people and their environment was prepared. In order to prioritize plant collectors, a number of international data basis were searched to obtain all the relevant ethnomedical, biological and chemical information on the plant known to be used in that region.

Plants were collected from study area and fetched to the Department of plant sciences, Quaid-i-Azam University Islamabad, Pakistan. Plants were identified by taxonomist and submitted in the Herbarium of Quaid-i-Azam University Islamabad, Pakistan.

Results

Following are the results of the present study:

**Allium cepa L.**

Family: Alliaceae  
Local Name: Piaz  
English Name: Onion  
Flowering Period: March-April  
Status: Cultivated  
Habit: Herb  
Habitat: Terrestrial  
Accession No: 125479

Description: A perennial herb bulbs clustered, ovoid or almost rounded with brown or pink papery coating.

Uses: Onion juice is administered in tobacco poisoning. It is best for cold and cough. Bulb is slightly warmed and placed over inflamed parts of the body for healing. Besides condiments, it is used as an ingredient of much other medicinal preparation. Used in diabetes, bronchitis, skin diseases, chickenpox and epilepsy.

**Foeniculum vulgare Miller**

Family: Apiaceae  
Local Name: Saunf  
English Name: Fennel  
Flowering Period: March-April  
Status: Cultivated  
Habit: Herb  
Habitat: Terrestrial  
Accession No: 125120

Description: A stout aromatic herb grows to a height of 5-6 feet.

Uses: Whole plant is used to cure digestive problems, gas trouble, female illness, and nervous diseases. Seeds are carminative, purgative. It is used in sweet dishes and pickles. Fruit is used in diarrhea and used as laxative. Seeds are used for flue, fever cardiac problems and flatulence. The leaves are used as diuretic.

**Coriandrum sativum Linn.**

Family: Apiaceae  
Local Name: Dhania  
English Name: Coriander  
Flowering Period: April-November  
Status: Cultivated  
Habit: Herb  
Habitat: Terrestrial  
Accession No: 125201

Description: Plants to 60 cm high. Basal and lower leaves pinnate to 2-pinnatisect; petiole to 13 cm, shortly sheathing at base.
Uses: Whole plant to seeds are powdered and made into paste with common salt and given internally to treat digestive problems. Whole plant decoction is given along with sugar or milk to treat bleeding piles, dyspepsia. Medicinally used for flatulence, dysentery, diarrhea, cough, stomach problems, jaundice and vomiting.

**Caralluma edulis (Edgew.) Bth. & Hk.**
Family: Asclepiadaceae
Local Name: Choongan
English Name: Carrion
Flowering Period: December-March
Status: Wild
Habit: Shrub
Habitat: Terrestrial
Accession No: 125146
Description: A small erect, fleshy, unbranched or branched herb 15-45 cm tall, stem and branches 4-grooved, nearly round.
Uses: The herb is cooling, alterative, anthelmintic; used in leprosy and diseases of blood. The dried powdered plant is mixed with cow’s ghee, which is used 4 times a day for treating diabetes. It is also used as vegetable and is considered nutritive and used for the treatment of rheumatoid.

**Artemisia scoparia Waldst and Kit.**
Family: Asteraceae
Local Name: Lungi booti
English Name: Worm wood
Flowering Period: April-August
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125121
Description: An erect perennial with thick roots stock.
Uses: The plant is also useful in heart problems. Aqueous extracts from flowering shoots is drunk to treat malaria and also used as anthelmintic agent in human and live stock.

**Taraxacum officinalis Weber**
Family: Asteraceae
Local Name: Peeli booti
English Name: Dandilion
Flowering Period: February-May
Status: Wild

Habit: Herb
Habitat: Terrestrial
Accession No: 125125
Description: A small perennial herb with milky juice.
Uses: Leaves and roots effective against snake bite; leaves are also used for diabetes. Root paste is applied on swelling and joints. The decoction of leaves is used for curing constipation as health tonic.

**Trichodesma indicum (L.) R. Br.**
Family: Boraginaceae
Local Name: Chota kulfa, Sindigaozaban, Nila karai
English Name: Trichodesma
Flowering Period: August-October
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125127
Description: Small erect hispid annual herbs
Uses: Whole plant extract is mixed with sugar and is given to treat diarrhea, dysentery and urinary problems. Leaf paste is given as an antidote for snakebite and diuretic. Leaf paste is applied to treat rheumatic swellings. Leaf juice is used as eye drops to treat eye infections. Root paste is applied to treat rheumatic swelling of joints. Root decoction is given to treat difficult and painful urination.

**Haloxylon recurvum Bunge ex Boiss.**
Family: Chenopodiaceae
Local Name: Khar/Surgal
English Name: Haloxylon
Flowering Period: November-December
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125143
Description: A straggling gregarious shrub; branches opposite, jointed pruinose, joints 8.20 mm long.
Uses: The plant is poisonous.

**Bryophyllum pinnatum (Lam.) Oken**
Family: Crassulaceae
Local Name: Zakhmi-hayat/Pathar chat
English Name: Bryophyllum/Air plant/Life plant
Flowering Period: November-December
Status: Cultivated
Habit: Herb
Habitat: Terrestrial
Accession No: 1251654
Description: A tall erect glabrous perennial herb; stem 30-120 cm high.
Uses: Leaves are used for bruises, wounds, boils and insect bites. It is best against hypertension and kidney stones.

**Citrullus lanatus (Thunb.) Mansf.**
Family: Cucurbitaceae
Local Name: Dvana
English Name: Water melon
Flowering Period: March-April
Status: Cultivated
Habit: Herb
Habitat: Terrestrial
Accession No: 125048
Description: A creeping plant resembling very much to *Citrullus colocynthis*, but a great climber; young shoots woolly at the tips.
Uses: Fruit is cooling and diuretic. Seed is aphrodisiac, Tonic cooling and diuretic seed oil is used as a substitute for almond oil.

**Cucumus melo var. agrestis Naudin**
Family: Cucurbitaceae
Local Name: Chiber
English Name: Wild melon
Flowering Period: July-September
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125209
Description: A scabrous creeping herb.
Uses: Fruit decoction is used to treat diarrhea, difficult and painful urination and leucorrhoea. Preserved fruits are fried and given to treat digestive problems. Leaf paste is applied to treat eczema and other skin infections. The fruit of plant is used as laxative. The plant is also used as fodder for the cattle.

**Momordica charantia L.**
Family: Cucurbitaceae
Local Name: Karela
English Name: Bitter gourd
Flowering Period: October-February
Status: Cultivated
Habit: Herb
Habitat: Terrestrial
Accession No: 125165
Description: Hairy creeping herbs with simple tendrils, branches villous, commonly cultivated for its fruits which are used as vegetable.
Uses: The fruit is stomachic and juice of fruit is used in snake bite. Fruit and leaves are anthelmintic used in jaundice, Piles, Leprosy and vermifuge. Juice of leaves is purgative and emetic; it is given in bilious, affections and rubbed in burring soil of feet root is astringent, useful in hemorrhoids.

**Euphorbia dracunculoides. Lam.**
Family: Euphorbiaceae
Local Name: Kangi
English Name: Spurge
Flowering Period: March-July
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125114
Description: An erect annual weed of cultivation, 15-40 cm tall, glabrous.
Uses: Fruit is used to remove warts.

**Euphorbia tirucalli L.**
Family: Euphorbiaceae
Local Name: Sej
English Name: Spurge
Flowering Period: May-July
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125346
Description: A large unarmed succulent shrub with milky white latex. Branches smooth, slender, cylindrical, spreading, succulent, green
Uses: Milky juice is rubificient, purgative, vesicant, used in rheumatism neuralgia toothache, earache, cough and asthma.

**Prosopis cineraria (L.) Druce**
Family: Mimosaceae
Local Name: Jund
English Name: Prospis
Flowering Period: December-March.
Status: Wild
Habit: Shrub
Habitat: Terrestrial
Accession No: 125090
Description: A large shrub or a small tree armed with short nearly straight somewhat compressed prickles which, on older branches, have broad and conical bases.
Uses: Leaves are useful in leucorrhoea and menorrhrea. It is ground with *Coccinia grandis*, mixed with palm jaggery and given orally (or) ground with sugar and butter milk given orally.

_Prospis juliflora_ Swartz
Family: Mimosaceae
Local Name: Kashmiri Kiker
English Name: Prospis
Flowering Period: March-June
Status: Wild
Habit: Shrub
Habitat: Terrestrial
Accession No.: 125091
Description: large shrub or tree, c. 5 m tall, generally armed with stipular spines.
Uses: Paste of leaves is laxative and carminative.

_Tamarindus indica_ L.
Family: Papilionaceae
Local Name: Imli
English Name: Tamarind
Flowering Period: February-April
Status: Cultivated
Habit: Tree
Habitat: Terrestrial
Accession No: 125437
Description: A large evergreen tree
Uses: Fruit is carminative, laxative, refrigerant, digestive, and useful in diseases of bile; infusion is used as a drink in fibril diseases.

_Pongamia pinnata_ (L.) Merill
Family: Papilionaceae
Local Name: Sukhchain
English Name: Mullikulam Tree, Pongam
Flowering Period: March
Status: Wild
Habit: Tree
Habitat: Terrestrial
Accession No: 125287
Description: A medium sized, evergreen tree; leaves imparipinnate; rachis 4-15 cm long, swollen at the base.
Uses: The decoction of leaves and bark is used as bath for fever. The oil is used for the cure of skin diseases and rheumatism.

_Cymopsis tetragonoloba_ (L.) Taub.
Family: Papilionaceae
Local Name: Gowara
English Name: Gynana
Flowering Period: April-May
Status: Cultivated
Habit: Herb
Habitat: Terrestrial
Accession No: 125009
Description: A robust medium-sized annual herb covered with appressed white hairs; 50-100 cm tall.
Uses: The fruit is laxative, used in biliousness and night blindness also used as vegetable.

_Indigofera linifolia_ (L.f.) Retz.
Family: Papilionaceae
Local Name: Torki
English Name: Wild Indigo
Flowering Period: April-June
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 124908
Description: A small prostrate or procumbent, silvery velvety perennial herb; stem many, much branched.
Uses: Plant is given in febrile eruptions and used in amenorrhea.

_Rhynchosia minima_ (L.) DC.
Family: Papilionaceae
Local Name: Wan Werhi
English Name: Burn-mouth vine
Flowering Period: June-August
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125110
Description: A small twining annual herb, minutely pubescent to nearly glabrouscent, up to 2 meter long with long with trifoliate.
Uses: Leave is used as abortifacient.

_Crotolaria burhia_ Buch.- Ham.
Family: Papilionaceae
Local Name: Sunn
English Name: Rattlepod
Flowering Period: December-January
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125234
Description: A small, apparently leafless, shrub with numerous, stiff, branches ending sometimes in spines.
Uses: The plant is solid by medicinal herbs and is claimed to have cooling properties.

**Pennisetum cenchroides Rich.**
Family: Poaceae
Local Name: Dhalman
English Name: African Foxtail Grass
Flowering Period: February-March
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125065
Description: Perennial, often forming mats or tussocks; culms 10-150 cm high, ascending, wiry or sometimes almost woody.
Uses: It has cooling effects for animals, purgative and stomachs

**Saccharum bengalense Retz.**
Family: Poaceae
Local Name: Kana
English Name: Sweet cane
Flowering Period: May-September
Status: Wild
Habit: Herb
Habitat: Terrestrial/Aquatic
Accession No: 125133
Description: Tall caespitose perennial; culms up to 4 m high.
Uses: Stomachs, toothaches and diuretic.

**Cymbopogon jwarancusa (Jones) Schult.**
Family: Poaceae
Local Name: Lanjak
Flowering Period: July-October
Status: Wild
Habit: Herb
Habitat: Terrestrial (Swamps and besides streams)
Accession No: 125468
Description: Perennial; culms erect or geniculately ascending, up to 150 cm high
Uses: The grass is aromatic, tonic, stimulant, blood purifier, cough, fever chronic rheumatism, gout and in dyspepsia.

**Polygonum plebijum R. Br.**
Family: Polygonaceae
Local Name: Drunk
English Name: Polygonum
Flowering Period: March-April
Status: Wild
Habit: Herb
Habitat: Terrestrial
Accession No: 125141
Description: A diffusely branched, prostrate, glabrous annual to biennial or perennial herb.
Uses: Plant decoction is used for colic complaints. Plant ash mixed with oil is useful for eczema. It is a good fodder plant.

**Zizyphus nummularia (Burm. f) Wight & Arn.**
Family: Rhamnaceae
Local Name: Beri, Mallah
English Name: Zizyphus
Flowering Period: March-April
Status: Wild
Habit: Shrub
Habitat: Terrestrial (Hot)
Accession No: 125142
Description: A thorny shrub; branches flexuous, divaricated at right angles.
Uses: Fruit is laxative. Paste of leaves is used in scabies. Fruits are tonic and digestive.

**Rosa indica L.**
Family: Rosaceae
Local Name: Gulab
English Name: Rose
Flowering Period: Throughout the year
Status: Wild/Cultivated
Habit: Shrub
Habitat: Terrestrial
Accession No: 125296
Description: A glabrous, evergreen shrub; stipules very narrow.
Uses: The fruit is used as an application to wounds sprains injuries and foul ulcers. The root is better and astringent used as tonic and anthelmintic. The leaves are considered a good vulnerary.
**Trapa bispinosa** Roxb.

Family: Trapaceae  
Local Name: Singhara  
English Name: Horn nut  
Flowering Period: March-August  
Status: Wild  
Habit: Herb  
Habitat: Terrestrial  
Accession No: 125298  
Uses: Nuts have cooling effect, bilious affections and in diarrhea.

**Peganum harmala** L.

Family: Zygophyllaceae  
Local Name: Harmal  
English Name: Syrian rue  
Flowering Period: March  
Status: Cultivated  
Habit: A wild herb  
Habitat: Terrestrial (Mostly)  
Accession No: 125100  
Description: Perennial, 25-60 cm tall, corymbosey branched, glabrous herb.  
Uses: Seeds are used in abdominal pain and colic pain. Whole plant is useful for defects in uterus. Seeds are placed on fire and its smoke is used for allergy treatment, patients feel comfortable. Smoke of seeds is one of the best antiseptic.

**Tribulus camalendulensis** L.

Family: Zygophyllaceae  
Local Name: Bhakra  
English Name: Calatrop  
Flowering Period: May-August  
Status: Wild  
Habit: Herb  
Habitat: Terrestrial  
Accession No: 125094  
Description: A prostrate, procumbent herb densely covered with minute hairs.  
Uses: Seed is used for gall bladder illness and kidney allergy. Leaves are used in cough. The fruits and rats are used for heart diseases seeds are used locally in bleeding from nose. Stem is used as miswak for brushing teeth. It is also as fodder for the cattle and sheep.

**Discussion**

Most helpful method to study the natural resources, their conservation and management by indigenous communities is ethnobotany. Ethnobotany enables us to do work with local communities and to discover the important knowledge that based upon their experience. In Pakistan, there is no supervision to conserve this knowledge. A few scientists or legal professional environmental, non-governmental or even human rights groups are taking pain to save this knowledge in black or white (Martin, 1995).

Medicinal plants are playing a key role in rural and sub urban areas in the traditional healthcare system. Various herbal medicines are being used as household remedies against different diseases as ailments (Qureshi & Gufran, 2005). In the present research work 32 plant species were surveyed, among which *Artemisia scoparia* Waldst and Kit., *Tribulus camalendulensis* L., *Bryophyllum pinnatum* (Lam.) Oke, *Trichodesma indicum* (L.) R. Br., *Taraxacum officinalis* Weber *Peganum harmala* L., *Polygonum plebijum* R. Br., *Cymbojwarancusa* (Jones) Schult., *Pongamia pinnata* (L.) Merill and *Tamarindus indica* L. are found highly medicinal and are frequently used in the study area. *Allium sativum* L., *Foeniculum vulgare* Miller are used for cardiac problems while *Allium cepa* L. is used to treat diabetes in local communities. *Foeniculum vulgare* Miller, *Coriandrum sativum* Linn., *Trichodesma indicum* (L.) R. Br. are frequently used against diarrhea. *Caralluma edulis* (Edgew.) Bth. & Hk., *Artemisia scoparia* Waldst and Kit. has antihelmenthic properties and *Taraxacum officinalis* Weber, *Trichodesma indicum* (L.) R. Br. are commonly used as antidote mostly against snake bite. *Bryophyllum pinnatum* (Lam.) Oken is a most frequent plant to break the kidney or bladder stone and this plant is cultivated at homes at large scales.

Study area is rich with medicinal plants and it is common trend to use these plants species in local healthcare system. This area has rural culture and the inhabitants of this area are dependent upon medicinal plants. Old people and women prefer to cure themselves with herbal medicinal. It is a dare need to preserve this traditional knowledge, as, it will helpful for phar-
maceutical industries to further pharmacological screening.

References


