

## **Indigenous Knowledge on Medicinal Plants, Village Barali Kass and its Allied Areas, District Kotli Azad Jammu & Kashmir, Pakistan**

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### **ABSTRACT**

An ethnobotanical exploration carried out during the years 2001 and 2002 in the Village Barali Kass and its allied areas, District Kotli Azad Kashmir, Pakistan, revealed that 66 species were used as folk medicine for the curing of several diseases. The data was collected from the local peoples including reliable hakims (local doctors), physicians and old villagers. Plant species with their botanical names, local names, status and folk medicinal uses have been collected and enlisted.

### **INTRODUCTION TO THE AREA**

#### **Location**

The Village Barali Kass and its allied areas are situated at a distance of 20Km from the district head quarters of Kotli, which is situated in the southern side of city. The altitude of the area ranges from 740m to 1200m. It is included in the sub tropical zone.

#### **Climatic Factors**

Temperature is very hot in summer and cool in winter. June and July are the hottest months (max.37°C and Min.25°C), while December and January are the coldest months (Max.17.5<sup>0</sup> C and Min.4<sup>0</sup> C) of the area.

#### *Wind*

The velocity of the wind is high in the morning and in the evening. The wind blows from north-east to south-west.

#### *Rain Fall*

The average annual rainfall of the study area is 114.42 millimeters.

#### *Humidity*

The average annual humidity at 8am is 77.16%; whereas at 5pm it is 56.66%.

## **Geology**

The study area falls within the Nagri formation of the Siwalik group of rocks which contain sand stones and shale (Saleem, M.1999-2000).

## **Soil**

Mostly the soil is loamy, clay and sandy clay. The soil is acidic with pH ranges from 6.1 to 6.4. The percentage of Phosphorus varies from 10—20 ppm, and potassium ranges from 40—120 ppm.

## **Culture**

The area has a mixed culture (i.e. rural and urban). Many people of the area seem to have some empirical knowledge of nature. They have acquired knowledge about the natural resources of their area through communication with others in their culture. The most common occupations of the people are farming and cattle rearing.

## **Hydrograph**

The main sources of water are from natural drainage areas and rainfall. There is one river Poonch, many nullahs and springs. People of the area make use of these sources of water for irrigation, drinking and other household purposes.

## **Biotic Factors**

The vegetation of the area is under biotic pressure due to erosion, fire, deforestation, overgrazing and browsing.

## **METHODOLOGY**

Field work in the study area was carried out between 2001 and 2002. Plants were collected and interviews were conducted of the local people, the latter resulting in the gathering of indigenous medicinal knowledge for 66 plant species. Several trips were made for this purpose. Only wild plants growing in the flowering stage were collected. Data relating to folk medicinal knowledge was collected by interviewing local inhabitants of several different professions, such as hakims (local Doctors), local physicians, pansaries and old people of the village. The collected plants were identified with the help of literature available in the Department of Botany at the University of Azad Jammu and Kashmir, Pakistan, including Nasir and Ali (1970-1987), Bhattacharjee, S.K. (1998), Raju, R.A. (1998), Kirtikar, K.R. and B.D. Basu (1999), and Joshi, S.G. (2002). Further identification and confirmation were done in the herbarium, Department of Biological Sciences, Quide-Azam university, Islamabad, Pakistan. The collections were recorded and documented according to their Families, Botanical names, Local names, Status, Parts used, and Folk medicinal uses.

## **RESULTS**

The plants are listed alphabetically in the following table by family, genus and species. Local names,

status and folk medicinal uses are given for each species. Of the 27 families treated here, all are angiosperms.

Botanical Names and Family names	Common Names	Status	Parts Used	Folk Medicinal Uses
<b>Acanthaceae</b> <i>Adhatota zelanica</i> Medik	Dasi Bailkar	Shrub	R.L	Roots and leaves are used in cough, bronchitis and dysentery
<i>Barlaria cristata</i> Linn	Kaloo	Herb	W.P	Paste of whole plant is stimulant and demulcent
<b>Agavaceae</b> <i>Agave Americana</i> Linn	Kaiwra	Shrub	L	Fresh leaves are roasted in the ghee or oil and applied on the swelling parts of the body.
<b>Amarantaceae</b> <i>Achyranthus aspera</i> Linn.	Puthkanda	Herb	W.P	The powder of the whole dried plant is useful for lumbago and whooping cough. Decoction is very useful in phenomena, cough and kidney stone. Root paste is given in stomach pain and toothache.
<i>Amaranthus spinosus</i> Linn.	Surkh Ganar	Herb	R.L	The root of the plant is diuretic. The leaves are eaten as vegetable, which are febrifuge.
<i>Amaranthus viridis</i> Linn.	Safed Ganar	herb	L	Leaves are emetic, laxative and diuretic
<i>Celosia argentia</i> Linn.	Tandoola	Herb	W.P.	The paste of the plant is useful in dysentery and it also facilitates delivery.
<b>Apocynaceae</b> <i>Carissa opaca</i> stapf-ex-Haines	Garinda	Shurb	Fr.l.	Fruit and leaves are cardiac and stimulant.
<i>Nerium oleander</i> Linn.	Gandeera	Shurb	R.L.Br,Ba	Branches are used in toothache and as toothbrush. Extracted oil from the bark is used to destroy maggots infesting wounds.
<b>Araceae</b> <i>Arisaema intermedium</i> Bl.	Samp ki much.	Herb	L.R.Tb.	Powder obtained from the root and tuber is applied on snake bite and scorpion sting.
<b>Asclepiadaceae</b>				
<i>Calotropis procera</i> Willd. R.Br.	Aak	Herb	L.	Fresh leaves area roasted in the ghee or oil and applied on the swelling part of the body
<b>Asteraceae</b>	Maleen	Herb	W.P.	Whole plant is diuretic and astringent. Root paste is useful in snakebite.
<i>Helianthus annus</i> Linn.	Sooraj mukhi	Under Shrub	WI.Sd	Flower is crushed, missed with oil and is applied in skin diseases. Seeds are diuretic and expectorant
<i>Saussuea heteromalla</i>	Gurana	Herb	Sd.	The seeds are carminative.

(D. Don) hand. Mazz				
<i>Sonchus asper</i> (Done) seh.	Dodal	Herb	W.P.	The whole plant is pounded and applied to wounds or boils.
<i>Taraxacum officinale</i> Webr.	Mithi hund	Herb	W.P.	Juice of the fresh plant is effective against liver disease and chronic hepatitis. Roots powder is used for the flow of urine.
<b>Berberidaceae</b>				
<i>Berberis lycium</i> Royle.	Komal	Shrub	R.L.Ba. Br. Fr.	The watery extract from the roots and stem is used in ophthalmia, fruit is cooling and laxative. Bark is used for internal wounds, throat infection, against diabetes and toothache. Root powder is used in bones fracture. The leaves are administrated as cure for jaundice.
<b>Bombaceae</b>				
<i>Bombax ceiba</i> Linn.	Simal Tree		St	The gum bleeding from the stem is very useful in toothache and sores in mouth.
<b>Boraginaceae</b>				
<i>Cynoglossum lanceolatum</i> Forrsk	Laindri	Herb	R	The powder obtained from the roots is used for bronchitis and eruption.
<i>Tricodesma indicum</i> R.Br.Prodr	Andoosi	Herb	W.P	The plant has depurative properties, beneficial in disease of eye.
<b>Brassicaceae</b>				
<i>Brassica varigiata</i> Linn	Kalyar	Tree	Ba.Bd	Bark is used as alliterative. Dried buds are used in dysentery, piles, diarrhea and worms
<b>Cannabinaaceae</b>				
<i>Canabis sativa</i> Linn	Phang	Herb	L	The decoction of the leaves is bitter, heating, astringent, for bowels, tonic, stomach ache and useful in leprosy. Dried and crushed leaves are taken as drink for their narcotic action. Locally fresh leaves are roasted in ghee or oil and applied on sexual organ (vagina) of women at the time of birth for pain relief.
<b>Chenopodiaceae</b>				
<i>Chenopodium album</i> Linn	Bathwa	Herb	L.Fl	Powder of the leaves used externally as an antiseptic around genitals of the children. Flowers are used in stomach

				trouble.
<b>Convolvaceae</b>				
<i>Convolvulus arvensis</i> Linn	Taran wali Jari	Climbing Herb	L.R	Extract of the leaves is purgative and also used in skin diseases, root possesses cathartic properties.
<b>Cucubitaceae</b>				
<i>Lagynaria siceraria</i> Standl.	Dabri	Climbing Herb	Sd.	Seeds are nutritive and used in dropsy. Seed oil has cooling properties.
<i>Cuscuta reflexa</i> Roxb.	Nila Tari	Climbing Herb	Sd.	The seeds are carminative
<b>Cyperaceae</b>				
<i>Cyperus rotundus</i> Linn	Madani Gass	Grass	Sd.	Tuber is home remedy for indigestion, diarrhea and other intestinal problems of children and paste of the tuber is applied to wounds.
<b>Euphorbiaceae</b>				
<i>Embllica officinalis</i> Gaerth	Amla	Tree	Fr.	The fresh fruit is tonic and useful in fever, indigestion, jaundice, anemia and heart complaints. Dried fruit is useful in diarrhea and dysentery.
<i>Euphorbia helioscopia</i> Linn	Dodal	Herb	W.P	Aqueous extract of the plant is wormicide and is applied for wound healing.
<i>Euphorbia hirta</i> Linn	Moti Dodal	Herb	W.P	The juice of the plant is given in dysentery and colic. The milk obtained from the plant is applied to destroy warts.
<i>Euphorbia royleana</i> Boiss	Danda Thor	Shrub	Bd.	The milky latex obtained from the buds is cathartic and anathematic, but poisonous and injurious to eyes.
<i>Mallotus philippensis</i> (Lam) Muel, Arg.	Kamial	Shrub	Fr.	The powder obtained from the fruit is used to destroy thread worms, hook worms and round worms.
<i>Ricinus communis</i> Linn	Harnoli	Shrub	Sd.L	Oil obtained from the seeds is a laxative, given to children in case of constipation and is also very useful in skin diseases. Heated and oiled leaves are placed on rheumatic joints, swelling and inflamed muscles. Few drops of oil doses are used in increase quantity of milk in nourishing women
<b>Fumariaceae</b>				
<i>Fumaria indica</i> Linn	Papra	Herb	W.P	Aqueous extract is given orally in fever, mouth inflammation, throat infection and menses

				disorder. It is also used as ear drops in ear diseases. Fresh leaves are applied externally on skin for softness.
<b>Genitaceae</b>				
<i>Swertia spaciola</i> (D.Don) (lark)	Kori Jari	Herb	W.P	Aqueous extract is useful in typhoid and jaundice.
<b>Lamiaceae</b>				
<i>Colebrookea oppositifolia</i> Smith. Exot. Bot	Chiela	Shrub	L	The leaves are applied to wounds and bruises.
<i>Nepeta greta</i> Linn	Ladori	Herb	W.P	Decoction of the whole plant is very useful in respiratory problems and chest infection
<i>Mentah longifolia</i> Linn	Chita Poodina	Herb	L.Fl.	Herbal tea is taken in abdominal disorder.
<i>Salvia officinalis</i> Linn	Noorchari	Herb	L.R.	Decoction of the leaves is used to treat cough, cold and sore throat. The root paste is very useful in scorpion sting and snake bite.
<b>Liliaceae</b>				
<i>Allium cepa</i> Linn	Payaz	Herb	Bl.L.	Extract of the bulb is useful in vomiting, body pains and ulcer. Roasted scaly leaves are applied on joint eruption and these are also expectorant. Bulbs of the plant are very useful in jaundice, pneumonia and asthma.
<i>Allium sativum</i>	Thoom	Herb	Bl.	Bulb is carminative, stimulant, aphrodisiac and expectorant. It also very useful in fever, high blood pressure and respiratory problems.
<i>Asparagus adsendens</i> Roxb.	Ari	Herb	R	Tuberous roots paste is very effective in scorpion sting, snake bite, dysentery problems.
<i>Aloe vera</i> Linn	Kanwar gundal	Herb	L.Pl.	The resinous juice from the leaves is used for stomach ache, a tonic and purgative. The mucilaginous pulp is said to possess biogenetic stimulators and wound healing properties. Aloe meat is eaten to alleviate colds, keeps bloods in good condition and relieves constipation.
<b>Lythraceae</b>				
<i>Woodfordia fruticosa</i> Kurz.	Dhavi	Shrub	Fl.	The powder of dried flowers is eaten with rice, which is very useful in dysentery.
<b>Meliaceae</b>				

<i>Melia ozedarach</i> Linn	Darik	Tree	Ba.Br.	The gum obtained from the bark is used as tonic and stimulant. Branches are used as toothbrush for toothache.
<i>Albezzia lebbeck</i> Benth in Hook. Lond.	Sirin	Tree	L.Sd.	Dried leaves are smoked for relief of headache, wounds and joint eruption. Seed are astringent, given in piles and diarrhea.
<b>Moraceae</b>				
<i>Ficus bengalensis</i> Linn.	Bohr	Tree	Fr.L.Bd.	The milky juice of fruit, leaves and bark is aphrodisiac. Also applied externally on skin for relief pains and bruises.
<i>Ficus carica</i> Linn	Toosa	Tree	L.St.	Fresh fruit used in anemia and constipation. Latex obtained from the stem and leaves for checking bleeding.
<i>Ficus palmate</i> Forrsk.	Phugwara	Tree	Free	Fruit is used as cooling, alterative and laxative.
<i>Morus alba</i> Linn.	Desi Toot	Tree	Fr.	Fruit is used in chest and throat infection.
<b>Myrsinaceae</b>				
<i>Myrsine Africana</i> Linn.	Googal	Shrub	Fr.	Fruit is given to expel the tapeworms from the intestine.
<b>Myrtaceae</b>				
<i>Eugenia jambolana</i> Lam, Encyl, Meth.	Jamoon	Tree	Fr.	Fresh fruit is very useful in snake bite and root powder is very effective in stomach ache.
<b>Nyctaginaceae</b>				
<i>Boerhavia repens</i> Linn.	Chanati	Herb	R.	Root paste is useful in snake bite and powder is very effective in stomach ache.
<b>Oleaceae</b>				
<i>Olea ferruginea</i> Royle.	Kahoo	Tree	L.Fr.	Leaves are antiseptic, chewed for toothache, jaw swelling and throat infection. Oil obtained from the fruit is used for rheumatism.
<b>Onagraceae</b>				
<i>Oenothera rosa</i> Soland.	Safed Mohri	Herb	Fl.R.	Root powder is used as a drug for removing weakness. Flowers are use in diahorrea and fever.
<b>Orchidaceae</b>				
<i>Harbennaria digitata</i> Lidle.	Mohri	Herb	Tb.	Paste of the tuber is useful in snakebite. It is also used as a powder form, dilute it in water or milk and administrated in the body through mouth for relief of intestinal and chest irritation.
<b>Oxalidaceae</b>				
<i>Oxalis corniculata</i> Linn	Jandoro	Herb	W.P	Aqueous extract of plant is given in stomach trouble. Boiled

				with butter or milk, it is a remedy for indigestion and diahorrea in children.
<b>Papaveraceae</b>				
<i>Papaver somniferum</i> Linn	Posth	Herb	Fl.	Decoction of the flowers is very effective in vomiting, cold (pneumonia) and dysentery in children.
<b>Papilionaceae</b>				
<i>Astragalus gramianus</i> Royle-ex.Benth	Kala Kandayara	Shrub	L.Ba.	Decoction of leaves and bark is used to cure intermittent fever having cooling effects and applied for internal mouth infection.
<i>Astragalus leucocephalus</i> Grah-ex-Benth	Kainthi	Herb	W.P.	Leaves are chewed for jaw swelling, toothache and throat infection. The decoction of the plant is used as a hair tonic for removing dandruff.
<i>Indigofera heterantha</i> Wall-ex-Brand	Chitta Kandayara	Shrub	L.Ba	Barks are used for an internal wound, throat infection against diabetes and toothache. Leaves are also chewed for toothache and jaw swelling
<i>Lotus corniculata</i> Linn.	Mukhan Booti	Herb	W.P.	It is antiseptic. Vegetative part of the plant is crushed and mixed with butter, and it is very useful in skin disease.
<b>Plantaginaceae</b>				
<i>Plantago lanceolata</i> Linn.	Chairan wali jari	Herb	Tb	The powder obtained from the tuber has anti-dandruff properties.
<b>Rutaceae</b>				
<i>Zanthoxylum aramatum</i> DC.	Timbber	Shrub	Fr.St. Br	Stem sticks are used for walking to heal piles. Fruit and sauce of fruit and branches are used for stomach ache and as a carminative. Branches are uses as toothbrush (Miswak).
<b>Saxifragraceae</b>				
<i>Berginia ciliata</i> (Haw) sternb	Zakhm-i- Hayat	Herb	L.St.	Extract of leaves is useful in dysentery, stomach ache, backbone pain, diarrhea, throat infection and fever. Dried leaves and stem are grained in to powder form and applied to heal wound and burns.
<b>Schrophulariaceae</b>				
<i>Digitalis purpurea</i> Linn.	Gandoora	Herb	L.Sd.	The dried leaves are cardiac stimulant and tonic. Seeds are used in skin disorder. Leaves are also applied on wounds and burns.



<i>Verbascum thapsus</i> Linn.	Gandoora (Gangli Tobacco)	Herb	L.Fl.R.	The leaves are hot, useful in chest complaints, rheumatism and diarrhea; the leaves warmed and rubbed with oil are employed as an application to inflamed parts. Flowers and roots are demulcent and astringent.
<b>Verbenaceae</b>				
<i>Vitex negundo</i> Linn.	Kala banna	shrub	L.Br.	The leaves are mixed with cow dung and are massaged in backache. Fresh branches are used as toothbrush Dried leaves are smoked for the relief of headache. Bathing in water boiled with the leaves benefits rheumatic patients, also used as insecticide and pesticide.
<b>Violaceae</b>				
<i>Viola odorata</i> Linn.	Banafsha	Herb	W.P.	Plants have laxative, purgative and sedative properties. A herbal tea (coffee) of flowers is effective in fever, flu, cough, pneumonia and body pain.
<i>Viola serpens</i> Linn.	Banafsha (Bamira)	Herb	W.P.	The decoction of whole plant is anaphrodisiac and it also very effective in fever and lung trouble.

**Key to Parts:** L (Leaves); St (Stem); Fl (Flower); Ba (Bark); Tb (Tuber); R (Root); Br (Branches).

## DISCUSSION

For an area of this size, there is very little information available about plant uses. However, the area has great floristic diversity and includes a number of medicinal plants.

The deterioration of the wild flora of this area is to be blamed on population pressure, forest fires and overgrazing and browsing. The present population has little knowledge about the medicinal plants of the area because most of the more knowledgeable, older persons have died and the younger ones are not as informed of traditional methods. However, as in the past, some empirical knowledge of medicinal plants among the tribes continues to be developed and transmitted orally from one generation to the next.

Medicinal plants of the area are widely employed by local healers for the treatment of various common and chronic diseases and disorders. Information on the uses of the above 66 plants species appears to be new to science. These plants are here recommended for further scientific investigation and screening.

There is great need to study and document this knowledge properly. If the people of this area can in the future manage to protect their natural resources from biotic interferences, their valley will then remain green, and will continue to present itself as a gift for future generations.

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