

ETHNOBOTANICAL STUDIES OF THE FLORA OF DISTRICT MUSAKHEL AND BARKHAN IN BALOCHISTAN, PAKISTAN

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ABSTRACT

An ethnobotanical study was carried out during May to August, 2003 in the mountainous region of Districts Musakhel and Barkhan of Balochistan province. Plants of 18 different families were collected from mountains, culturable waste, and agricultural fields to figure out the ethnobotanical perception among the local communities. Maximum plants were recorded from family Solanaceae. Many of the species are identified as medicinal for curing different common diseases like puncturevine (*Tribulus terrestris*) is useful in inflammatory conditions of urino-genital system and help relieve calculus infection and uterine disorders. *Rosa damascena* is regarded as refrigerant, for the vital organs, stomach and intestines. *Peganum harmala* leaves are used for joint pain, seeds are antiseptic, also used as insect repellent when burnt. Chicory (*Cichorium intybus*) is used as tonic, in fevers, vomiting, and diarrhea. Curly dock (*Rumex crispus*) is used as a pot herb and healing injuries. It is laxative, alternative, tonic & can be used in rheumatism, and skin diseases. *Acacia nilotica* is used as a mouthwash in cancerous and syphilitic infections. It is a useful local astringent douche or anemia on gonorrhoea, cystitis, vaginitis, leucorrhoea, and piles etc. It is an effective tonic in chronic diarrhea and diabetes mellitus. Fried gum is a useful nutritive tonic and aphrodisiac in sexual disability. *Mentha spicata* dried leaves are used as tooth powder for toothache. Many species are used as forage for cattle like *Chenopodium album*. Some of the species are used as pot herbs like *Solanum nigrum* and *Chenopodium album*. Some of the reported species are used as fuel and for other domestic uses like *Astragalus* and *Acacia* species.

Key Words: Medicinal plants, firewood, *Cichorium intybus*, *Euphorbia prostrata*.

INTRODUCTION

A plant in one place may be useful as food, feed, fiber and medicine, while at others it may be a weed. Thus, plant species cannot be considered as weed under all circumstances. Pakistan is one of the few places on earth with such a unique biodiversity, comprising of different climatic zones with a wide range of plant species. Approximately 6000 plant species with medicinal properties are found in Pakistan. There is a dire need on the part of manufacturers of allopathic and herbal medicines to carry out systematic

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research on medicinal plants to save foreign exchange spend on their imports (Shinwari and Malik, 1989). Balochistan is the largest province representing 43.6 per cent of the land mass of Pakistan. The climate is arid to semi-arid, ranging from coastal; tropical to cool temperate in the north. This province is a native home of some herbal plants. In Balochistan, various wild herbs have been collected and sold in the local market by local communities. However, very limited scientific knowledge is available on the potential herbs, which can be cultivated and utilized for different purposes. The vulnerability of medicinal herbs and spices to over-exploitation and extinction need to be dealt pragmatically. The concerns and issues relating the conservation of these plants could be addressed through variety of activities involving pinnacle government and non-governmental organizations of sector (Khan and Aslam, 2004).

Present study is carried out in mountainous region of Districts Musakhel and Barkhan of Balochistan. This area has Semi arid with warm summers and mild winters with mean Annual rain fall is 514.6 mm (1993-1995). Major crops of the area are wheat, condiments, maize, pulses, vegetable, sorghum and fruits. It is situated at 30°-17' to 31°-28' North latitude and from 69°-28' to 70°-15' East longitudes. It is bound in the north by the Dera Ismail Khan, in the east by Dera Ghazi Khan, in south Kohlu Agency and in the west by Loralai and Zhob districts. The vegetation in Musakhel consists mainly of grasses and spiny shrubs (Faiz, 1997).

MATERIALS AND METHODS

In this study, spread from Kingri in district Musakhel to Rakni of District Barkhan, was frequently visited for collection of data during the summer 2003. The villages covered in the survey were Kingri, Gider Dog, Rara Sham, Sirati, Underpur and Rarkan in District Musakhel and village Rakni in the District Barkhan, Balochistan.

Local people of this area were interviewed for collection of information about medicinal and other uses of plants. The local uses of enigmatic specimens were also confirmed by elderly people having knowledge of local herbs. Questionnaire method was adopted for this purpose. The data obtained was then analyzed carefully.

Available literature on the activity of these ethnomedicinal plants was also surveyed in order to check the validity and authenticity of medicinal uses highlighted by the rural folk of the surveyed area, so as to establish possible rationale between the real life uses and available data on these plants. The individual plant species have been saved in pictures as well as mounted on the herbarium sheets. The botanical identification of weeds was done from the Department of Weed Science, NWFP Agricultural University, Peshawar and Department of Biological Sciences, Quaid-e-Azam University, Islamabad.

RESULTS AND DISCUSSION

Plants of 18 different families were collected, out of which 20 plants from 13 different families are identified with their folk uses. The plants were classified as Trees, shrubs, herbs, medicinal plants, fodder plants and pot herbs. Much of the species were found to be used for multipurpose. Based on the utility, there were 18 medicinal plants, 4 fuel wood species, 2 species pot herbs and 3 fodder plants. The data on wild plants

contains information on Botanical names, English names, Local names, Family, Locality, part used and medicinal uses with references

1. *Acacia nilotica* (Linn.) Del.

English Name	: Gum arabica
Local Name	: Urdu: Kikar, babul, Persion: Umeghylan, Sindhi: Babla, Balochi: Khaghird
Tibb	: Babul
Family	: Mimosaceae
Locality	: Everywhere in the area studied
Part used	: Root, flower, fruit, bark and gum.
FOLK USES	: Bark used in processing of leather formation. It is used for nervous weakness, malaria and for chronic fever.

Uses of Plant from Review:

Strongly astringent, it is used to contract and toughen mucus membranes throughout body. Decoction of bark is used in diarrhea, for gargle and sore throat. a wash for eczema, for an eye wash. It is also recommended for chest complaints. The herb is also used as a douche for excessive vaginal discharge. In ayurvedic medicine, babul is considered a remedy that is helpful for treating premature ejaculation. Care must be taken that babul must not be taken for more than a few days at a time (Khan and Aslam, 2004).

2. *Acacia modesta* Wall.

English Name	:
Local Name	: Urdu: Phulahi, Seraiki: Phulah, Balochi: Khaor
Tibb name	:
Family	: Leguminiceae
Locality	: Every where
Part Used	: Leaves, Gums
Folk Use	: Leaves are used as fodder. Gum is stimulant and given as sweet made with 'Desi ghee' Poppy seeds, almonds and sugar to women after childbirth. Root pieces uses for cleaning teeth. Treatment wounds by boiled bark water.

Uses of Plant from Review:

The gum obtained from bark is mixed with desi-ghee, almond and wheat flour and fed to the women after child birth as tonic to relieve her body weakness. (Humayun *et al.*, 2003)

3. *Achyranthes aspera* Linn.

English Name	: Prickly chaff flower
Local Name	: Puthkanda, Balochi: Puth-khaphugh
Family	: Amaranthaceae
Useful Parts	: whole plante

Part Used : Dried ripe fruits

Folk uses

Boiled plant water is used for abdominal pain, cough, asthma and skin diseases.

Uses of Plant from Review: The ripened fruits are roasted and grinded and are used by the patient of asthma as an expectorant. (Hamayun, et al., 2003) Root infusion is used for removing stones from kidneys (Ibrar et al., 2003)

4. *Calotropis procera* (Willd.) R.Br.

English Name : Calotropis (Swallow Wart.)
 Local name : Urdu: Ak, Balochi: Kharegh
Tibb : Madaar.
 Family : Asclepiadaceae
 Locality : Common weed of waste, dry and exposed.
 Part Used : Whole plant.
Folk Uses : Internal part of flower and sugar used for abdominal diseases and asthma. leaf extract mixed with oil on heat used for joint and waist pain. Leaves are smoked for asthma. Leaf and black pepper used to cure malarial fever.

Uses of Plant from Review:

Plant parts are crushed with raw sugar (gur) to make a paste which is applied over to dog bites. Leaves are smoked to cure asthma and cough. Latex is utilized commonly in skin disorders. It is poisonous. Used in boils, and also to remove the thorn from the body. (Rai et al., 2000) Plant is bitter, having local irritant action. It is good tonic, expectorant, laxative. Plant is useful for treatment of asthma, cough, piles, ulcers, fever, headache, pain of muscles, joints and chest, healing of wounds, inflammatory and swellings. Milk is used in tooth powders. Leaves are mixed with rock salts and roasted in close vessels till reduced to ashes, these ashes are given with butter milk for ascites and enlargement of the abdominal viscera. Extract of leaves 1-5 drops is given for malarial fever and is more effective than quinine but is poisonous in large doses. Dry leaves are smoked in huka for remedy of asthma and cough. Fresh leaves slightly roasted and powdered bandaged to painful rheumatic joints and swelling. Flowers are tonic, stomachic and digestive, they are given in small doses in cough, cold, asthma, loss of appetite and cholera (Memon and Shahani, 1985.)

5. *Citrullus colocynthus* (L.) Schrad.

English Name : Colocynth
 Local name : Urdu: Tumah, Percion: kherazah talkh, Seriaki: Kortumah, Balochi: Guchh
Tibb : Indrayan
 Family : Cucurbitaceae
 Locality : waste land
 Part Used : The dried pulp, roots, seeds
Folk Uses : Seed powder and mixed with salt help in digestion. pulp used for different abdominal and uro-genital diseases and fever. Pulp extract mixed with oil on heating used for earache.

Uses of Plant from Review:

The bitter pulp is used as strong purgative. Root is given in Jaundice, urinary disease and rheumatism. Fruit and root are considered as antidote to snake poison (Khan and Aslam, 2004)

6. *Cichorium intybus* L.

English Name	:	Chicory
Local Name	:	Urdu: Kasni, Punjabi Gul, Kasni, Balochi: Kasrin
Tibb	:	Kasni
Family	:	Astraceae/ Compositae
Locality	:	Archards
Part Used	:	whole plant
Folk Uses	:	Young shoots cooked as food. Used for cooling effect, urinary, stomach and abdominal diseases. Root poultice for curing pains.

Uses of Plant from Review:

Plant is excellent mild bitter tonic for the liver and digestive tract. Root supports the action of stomach and liver and cleaning the urinary tract. It is also taken (Khan and Aslam, 2004)

7. *Convolvulus arvensis* Linn.

English Name	:	Field Bind Weed
Local Name	:	Urdu: Heran Khuri, Sindhi: Iela Buti, Balochi: Sheer Walh
Tibb	:	Heran Khuri
Family	:	Convolvulaceae
Locality	:	Field weed
Part Used	:	Vegetative part
Folk Uses	:	Used as blood purifier and to cure skin diseases.

Uses of Plant from Review:

Used as poultice on painful joints (Ibrar 2003). Fresh fodder, purgative, also applied in skin disorders. The old women used roots of *Convolvulus arvensis* for washing hair to remove dandruff (Hamayun *et al.*, 2003).

8. *Datura innoxia* Mill

English Name	:	Thorn Apple
Local Name	:	Urdu: Dhatura, Balochi: Khekhura
Tibb	:	Taturah
Family	:	Solanaceae
Locality	:	Common waste land
Part Used	:	Leaves, seeds
Folk uses	:	Seeds with oils used for painful joints. Poultice of leaf is used in piles and skin diseases. Leaves are smoked for asthma. Seed extract and dry grapes are used for flu, asthma and cough.

Uses of Plant from Review:

Leaves are applied externally in swelling of limbs. Extract of leaves is helpful in toothache, headache and epilepsy. Leaves extract effect the nervous system, overdose may induce vomiting, coma and even death. Seeds are antipyretic and narcotic.

Dried leaves and seeds are used in treatment of asthma. Plant is commercial source of scopolamine used as pre-anesthetic in surgery, in ophthalmology and prevention of motion sickness (Purohit and Vyas, 2004).

9. *Euphorbia prostrata* L.

English Name	:	
Local Name	:	Urdu: Doodhi, Persian: Sherak, Balochi: Sherak
Tibb	:	Hazar Dani
Family	:	Euphorbiaceae
Locality	:	Waste land and lawns
Part Uses	:	Whole plant.
Folk Uses	:	Used in chronic fevers. Used for nervous activation, abdominal diseases and as blood purifier.

Uses of Plant from Review:

The milky latex obtained from the plant is used to expel of ringworm. The whole plant is taken, crushed and eaten with bread as a useful remedy for kidney stone (Hamayun, et al., 2003).

10. *Mentha spicata* Linn/ *Mentha viridis* Linn

English Name	:	Peny Poyal Savine
Local Name	:	Urdu: Podina Kohi, Balochi: Vahash bu
Tibb	:	Podina Kohi
Family	:	Labiatae (hamiaceae)
Locality	:	A perennial wild and cultivated herb on waste lands and fields.
Part Uses	:	Leaves.
Folk Uses	:	Leaves are used for teeth-ache. It is also used for urinary, abdominal and skin diseases.

Uses of Plant from Review:

The leaves of *Mentha sylvestris* along with other vegetable and the leaves of *Mentha spicata* in the form of ketchup is used for stomach problems (Hamayun, et al., 2003). Niskyamishti (typhoid), khodur (diarrhea), indigestion.

11. *Nerium oleander* Mill.

English Name	:	Oleander
Local Name	:	Urdu: kaner, Balochi: Jor, Persian: kherzhrah
Tibb	:	Kaneer
Family	:	Apocynaceae
Locality	:	Near Springs
Parts used	:	Leaves, roots and seeds
Folk Uses	:	Poultice of leaves on painful parts of body. Dried leaf powder is used for healing of wounds.

Uses of Plant from Review:

Plant is poisonous. Root and root bark is powerful diuretic, resolvent, attenuate and cardiac tonic. Externally applied to ulcer and cancer, oil is used in skin diseases and leprosy. Powder of root is rubbed on forehead to relieve headache (Khan and Aslam, 2004)

The leaves and the flowers are cardio-tonic, diaphoretic, diuretic, emetic and expectorant (Duke and Ayensu, 1985) A decoction of the leaves has been applied externally in the treatment of scabies (Chie, 1984), and to reduce swellings. This is a very poisonous plant, containing a powerful cardiac toxin. An oil prepared from the root bark is used in the treatment of leprosy and skin diseases of a scaly nature (Chopra *et al.*, 1986)

12. *Peganum harmala* L.

English Name	:	Syrian rue, Peganum
Local Name	:	Urdu: Harmal, Balochi: Aspand
Tibb	:	Ispand
Family	:	Zygophyllaceae
Locality	:	everywhere in the area studied
Part Used	:	Seeds, leaves
Folk Uses	:	Seeds with honey is used for asthma. Seed are anti-Phlegmatic for respiratory tract. Decoction of leaves is used for Joint pains and bone cracks.

Uses of Plant from Review:

The seeds are aphrodisiac: used for relieving cough and asthma, for expelling phlegm and in brain or nervous disorders including insanity, loss of memory, sciatica, paralysis, and for imparting warmth to relevant organs. The decoction of leaves is used for joint pain, seeds are antiseptic, also used as insect repellent when burnt.

Internally for stomach complaints, urinary and sexual disorders, epilepsy, menstrual problems, nervous and mental illnesses. Remedy for tape worms. Excess causes hallucinations and vomiting. Externally for hemorrhoids and baldness (Khan and Aslam, 2004).

13. *Rosa damascena* Mill.

English Name	:	Rose; damask rose, Persian rose
Local	:	Gulab-ke-phul, Urdu: Gulab, Balochi: Gulegulab
Tibb	:	gul-i-surkh
Family	:	Rosaceae
Locality	:	Near Orchards
Parts Used	:	Petals, Pollens
Folk Uses	:	Petals are mixed with Sugar to form Gulkand used for abdominal diseases. Petals are used for making syrups used in summer. Pollens are also used for abdominal diseases.

Uses of Plant from Review:

The rose flower is regarded as refrigerant, for the vital organs, stomach and intestines, has compound action of causing mild purgation as well as astringency, lessens the heat due to biliousness, gives fragrance in perspiration and reduces its excessive excretion (PARC). Petals are used as laxative. Anthers are used in diarrhea (Aawan, 1976).

14. *Solanum nigrum* L.

SYN	:	<i>Solanum miniatum</i> Benth.
English Name	:	Black Nightshade
Local Name	:	Urdu; Makao, Seraiki: Kerviloon, Balochi: Tholagh-Drakh
Tibb	:	Makao
Family	:	Solanaceae
Locality	:	Orchards, Sorghum Fields
Part Uses	:	Berries, leaves.
Folk Uses	:	Tea of younger leaves is used for curing flu, cough and fever. Dried fruits are used for stomach diseases. Cooked as Pot herb and is used for abdominal diseases. Poultice of leaves is used on burnt skins and wounds.

Uses of Plant from Review:

The leaves are plucked and crushed in green condition. These crushed leaves are used externally in skin diseases, usually when skin has small warts (Hamayun et al., 2003). The herb is alterative, diuretic, sedative and anodyne, expectorant, tonic laxative and leaves are used as poultice in inflamed joints. Berries are used in inflammation of liver and abdominal viscera, piles gonorrhoea (Khan and Aslam, 2004)

15. *Solanum xanthocarpum*/ *Solanum surratense* Burm.

English Name	:	Kantakari
Local Name	:	Urdu: Kandiyari, Seraiki: kandari, Balochi: Rachhali
Tibb	:	Katai
Family	:	Solanaceae
Locality	:	Waste lands
Part Uses	:	Whole plant.

Folk Uses	:	Root is boiled in water and then water is used as anti-phlegmatic, also unripe fruit is used for same purpose.
Caution	:	Use only under professional directions.

Uses of Plant from Review:

Plant is bitter, digestive, expectorant, seed may relieve asthma and to clear bronchial mucous. The root is used for snake and scorpion bite (Khan and Aslam, 2004). Decoction of root with black pepper and honey is used for cough and flu. Sniff of ripped fruit is used to cure headache (Aawan, 1996).

16. *Tecomella undulate* Sm.

English Name	:	Bushy Cardinia
Local name	:	Urdu: Rohira, Rohitaka, Balochi: pharphugh
Tibb	:	Rohira
Family	:	Bignoniaceae
Locality	:	Waste lands
Part Used	:	Flowers, Bark of stem and root
Folk Uses	:	Laxative, Extract of barks is used for abdominal diseases.

Uses of Plant from Review:

Plant is useful for treatment of urinary troubles, enlargement of spleen, leucorrhoea and. The bark possesses mild relaxant, cardio tonic and chloretic activities. The bark of young branches are used as remedy for syphilis, eczema, liver diseases and fever. Seeds are used in treatment of sores and abscesses (Memon and Shahani, 1986).

17. *Tribulus terrestris* Linn.

English Name	:	Small caltrops; puncture vine; devil's thorn
Local Name	:	Urdu: Gokhru, chota Gokhru, Bakhra, Persian: Kharkhask, Balochi: Bakhdra
Tibb	:	Gokhru
Family	:	Zygophyllaceae
Locality	:	Waste lands
Folk Uses	:	Anti sterilent, Syrup of seeds is used to expel kidney stones.

Uses of Plant from Review:

Recommended in cases of spermatorrhoea, phosphaturia, dysuria & impotence. Administered in urinary diseases such as chronic cystitis, calculus affections, gonorrhoea and painful micturition. It is useful in inflammatory conditions of genito-urinary system & helps relive calculus affection & uterine disorders.

Roots are useful in strangury, sysuria, vitiated conditions of *vata* and *pitta*, Renal

and vesicles calculi, anorexia, dyspepsia, cough, asthma, consumption inflammations, cardiopathy, haemoptysis, spermatorrhoea, anemia, scabies, ophthalmic, ulocace and general weakness. Seeds are useful in epistaxis, hemorrhages, ulcerative, stomatitis. Ash of whole plant is good for external applications in rheum arthritis (Purohit and Vayas, 2004).

18. *Withania cougulans* Dunal.

English Name	:	Cheese maker, vegetable rennet
Local Name	:	Urdu: Paneer, Balochi: Khofrain
Tibb	:	Tukham Hayat
Family	:	Solanaceae
Locality	:	Waste Lands.
Part Used	:	Leaf, Fruits, Seeds, root and bark
Folk Uses	:	Used to cure stomach diseases and abdominal pain

Uses of Plant from Review:

It is used for chronic liver complaints, asthma, biliousness, dyspepsia and other intestinal infections. Dried fruit is used for coagulating milk in process of cheese preparation. Berries are best blood purifiers and infusion of leaves is useful for fever (Memon and Shahani, 1985)

19. *Ziziphus nummularia*

English Name	:	Wild Plum
Local Name	:	Urdu: Jangli bari, Balochi: khnur
Tibb	:	Kinar dashti
Family	:	Rhamnaceae
Locality	:	Waste lands
Folk Uses	:	Used as fruit. Dried root powder is used to cure vomiting and other abdominal diseases. Bark is used for Teeth diseases and flu.

Uses of Plant from Review:

Root bark is used in diarrhea (Aawan, 1996).

20. *Ziziphus spp*

English Name	:	
Local Name	:	Balochi: Tholugh khnur, Seraiki: Gider beri
Tibb	:	Kinar dashti
Family	:	Rhamnaceae
Locality	:	Waste lands
Folk Uses	:	It has cooling effect, and its syrup is used to cure jaundice and other abdominal diseases. Bark is used for Teeth diseases and flu.

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Acacia nilotica (Linn.) Delice.



Acacia modesta Wall.



Convolvulus arvensis L.



Achyranthes aspera Linn.



Calotropis procera (Willd.) R.Br.



Cichorium intybus L.



Nerium oleander



Euphorbia prostrata L.



Peganum harmala L.



Solanum miniatum Benth. Ex Wild



Tribulus terrestris Linn



Withania coagulans Dunal