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ETHNOBOTANY OF QADAN WARI OF NARA DESERT

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Abstract

Ethnobotanical study of Qadan Wari of Nara desert was carried out during 1998-2000. Forty seven species were identified belonging to twenty two families. Off them, one monocot (Poaceae) with five species. Use of plant wealth by inhabitant is assessed. The present paper includes some common wild plants used for food, medicine, veterinary medicine, construction of houses and other uses.

Introduction

The numerous and manifold uses of plants are in practice by the people of Pakistan especially in the remote areas. In fact, such knowledge has not been given due consideration. Therefore, it is imperative to have scientific study of such plants to assess their efficacy.

Indigenous knowledge is as old as human civilization but the term "Ethnobotany" was first applied by an American Botanist Harshberger in 1895 to the study of plants used by the primitive and aboriginal people. Later, Wolney H. Jones (1941) and Richard Ford (1978) redefined Ethnobotany as "The study of direct interaction between human and plant population through its culture each human population classified plants, develops attitude and beliefs and learns the use of plants, while human behaviour has a direct impact on the plant communities with which they interact, the plants themselves also impose limitation on human, these mixture interactions are the focus of ethnobotany" (Pei, 1995)

Today, ethnobotany is widely accepted as science of human interactions with plants and its ecosystem. Ethnobotany is multi-disciplinary science of botany, ecology and anthropology. Thus, ethnobotany is more than simply a study of plants useful to people. It is also devoted to understand the limitation and behavioural consequences of human population's action on their plant environment. One of the objectives of ethnobotanical study is to record the indigenous knowledge about plants.

This field of plant science is quite virgin in Pakistan in its scientific study point of view. A large group of population depends upon traditional medicine, which largely consists of medicinal plants. The practitioner of this system is locally known as "Hakim". They use medicinal plants in various ailments of human beings and livestock as well. They use vernacular name for the identification of plants. They record their experiences and writing books about the use of such plants. But the problem with such books is that they don not contain authentic identification/scientific name of plants. Therefore, they totally depend upon verbal information.

So far, a few papers have been published in our country. Chaudhary (1961) estimates more than 1500 medicinal plant species in Pakistan. Some other workers who contributed in this regard are Hocking (1958, 62), Paris & Dillemann (1960), Chaudhri (1960 & 1966), Khan (1962), Chaudhri & Chuttar (1966). Malik (1985), Baquar & Tasnif (1984), Chaudhri & Arshad (1987), Baqar (1989), Shinwari and

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Malik (1989), Malik *et.al.* (1990), Ali (1986 & 1991), Ahmed *et al.* (1992), Dastur (1952), Goodman & Ghafoor (1992), Leporatti and Lattanzi (1994), Rizvi *et.al* (1998), Shinwari & Khan (1998). Potential publications were made by Arshad & Rao (1994) on Flora of Cholistan Desert (Systematic list of trees, shrubs and herbs) and Plant-genetics resources of Cholistan desert and their utilization in 1993. Ansari et al. (1993) published a Floristic list of district Khairpur in "Ecological studies on some desert plants of District Khairpur". Their survey included 80 species belonging to 34 families. Survey of Medicinal Plants in District Khairpur by Ansari et al. (1993) indicates that there are 35 species of 23 families. Their work serves as a check-list. Rajput et al. (1991) reported about 40 species belonging to 23 families from Thar desert, which are used as medical plants for different ailments.

A lot of work has been done in Indian desert, which is on other side of Thar Desert of Sindh. Botanical Survey of India is one of the well-established departments, which publishes the Flora of India. Shetty & Singh (1991) published the Flora of Rajasthan. This Flora is in two volumes, presented up-to-date knowledge on the floristic wealth of the Rajasthan. In 1983, Singh & Pandy described 131 genera belonging to 53 families as useful and medicinal plants of western Rajasthan.

Administratively, Sindh Arid Zone Development Authority has divided the Arid Zone of Sindh Province into three regions; i. Kohistan (the western side of the Indus Valley), ii. Thar (the Eastern area of Sindh Province). Thar further subdivided into Nara region in the North and Thar region in the south. This division has been adopted in carrying out present study.

"Qadanwari" is situated on the Right Bank Nara River in the Nara Taulka of Khairpur district. The area in question has got its importance because of Gas Field, where LASMO Oil Company Supply Gas to Sui Southern Gas Company. The study area spread over about 30 square Km. The topography is distinctly marked with sandy hills and step slopes. Undeveloped brown-gray sandy soils constitute the major soil types in the area under study.

Climate, topography and edaphic factors play a significant role in determining the vegetation (plant in general or the total aggregation of plants of an area). This area is classified as an arid tract, characterised by extreme temperature (a long dry summer), severe drought accompanied by high wind velocity and too scanty rainfall. Generally very cold in the cold season and very hot in the hot season. Temperature ranges between 40-52 centigrade in summer and freezing in winter. The average annual rainfall varies from 100 to 250 mm, falling mostly between July and September. But no rainfall took place in period of undertaken study. As result, there is a scarcity of water, which has limited agriculture in this area. The people are largely dependent on their livestock i.e. sheep, goat and camels.

Material & methods

This work was based on intensive and extensive exploration of whole by paying regular visits. For that many experienced persons were contacted. The Mosque Pesh-Imams and Schoolteachers proved as an authentic source of information. The plant species were collected and identified. Their herbarium sheets were made and deposited in Shah Abdul Latif University, Khairpur and Pakistan Museum of Natural History, Islamabad.

Results & discussion

The vegetation in this region is sparse consisting mainly of stunted, thorny or prickly shrubs and perennial herbs capable of drought resistance. *Calligonium polygonoides, Aerva javanica, Slavadora oleoides, Prosopis cineraria, Acacia senegal, Capparis decidua,, Leptadenia pyrotechnica* and *Ziziphus nummularia* have formed the common vegetation cover in this area. The ephemerals come up during the rainy season, complete their life cycle before the advent of summer and the bulk of the area is once more transformed into open sandy plain, desolate and barren.

Trees, shrubs even roots of the plants are indiscriminately cut for fuel, feed, fencing and construction of thatched huts called "Chuanra". About 15 Km south-west of LASMO Gas Filed' a large population of *Prospis cineraria* covering about 2 kilometers was cutting down for the purpose of coal formation. This practice is causing gradual disappearance of some species.

The floristic list of species collected from the study area is grouped into Monocotyledon and Dicotyledon. The families, genera and species are arranged alphabetically in a checklist provided below. It also includes the vernacular names of the species and their uses as well. This information is also listed in the Table no.1.

MONOCOTYLEDON

Poaceae

Cynodon dactylon (L.) Pers. (Vern. Chhabar (Sindhi)

- It is a favorite fodder grass for camel, horses, donkey, buffalo and cow.
- It is grind in water and made a paste used for cuts.

Desmostachya bipinnata (L.) Stapf. (Vern.Dabh (Sindhi)

- It is consumed as a fodder grass for buffalo and cow.
- The stalk/culm of the inflorescence is used for broom.
- The leaves are woven to make ropes.

Eragrostis minor Host. (Vern. Gaah)

- A favorite fodder for camel and goat.

Leptochloa panicea (Retz.) Ohwi. (Kalar Gah (Sindhi)

- A favorite fodder for cattle.

Saccharum bengalense Retz. *(Vern. Booro (Sindhi)*

- The stem is used in making roof that is called as "Patar" and is used for thatching of roof.
- Sitting chair is made from the stem, which is called, as "Booro".
- The sheath blade is beaten and is used for making ropes (It is a good fiber).
- The leaves are employed for making mats that are used for drying dates.

The root of the plant along with the equal quantity of *Calotropis procera*, *Solanum surattense* and *Schweinfurthia papilionacea* is boiled in water and is given to cattle for abdominal worms and in loss of appetite.

DICOTYLEDON

Aizoaceae

Zaleya pentandra (Linn.) Jaffrey. (Vern.Waho, Wasaho (Sindhi)

- Used as fodder for camel, sheep and goat.

Amaranthaceae

Achyranthes aspera Linn. (Vern.Ubat Kanderi)

- It is used as fodder for camel, sheep and goat.
- The paste of leaves is applied on insect bites.

Aerva javanica var. *javanica* (Burm. F.) Juss. ex J.A. Schultes. (Ver. Booh (Sindhi)

- The decoction of the root of this plant is used in skin infection of animals.
- The leaves are used as a fodder.
- The poultice is made from the leaves and is used in pain and inflammation.
- The decoction of the plant is given to cattle to expel the abdominal worms.
- The plant is highly valuable for sand binder.

Amaranthus virdis Linn. (Ver. Mariro (Sindhi).

- The plant is used as a potherb.
- The plant is dried under shadow and is cooked as a vegetable after passing the season.

Digera muricata (L.) Mart. (Vern. Lulur (Sindhi)

- The plant is cooked as a vegetable.
- It is a favorite fodder for cattle.

Asclepiadaceae

Calotropis procera (Willd.) R. Br. (Vern. Ak (Sindhi).

- The salt obtained from the plant used in asthma, cugh, indigestion and joints pain.
- The stem is forcefully administered by mouth in cattle against colic and indigestion in cattle.
- Young twigs grind and poultice is made which is used externally for pain and inflammation.
- The fresh yellow leaves are slightly warmed over fire and obtained juice is poured into ears for otorrhoea.

- The silky floss of the seeds (Cotton) is used for stuffing pillows.
- The smog of the plant keeps mosquitoes away from the houses.

Leptadenia pyrotechnica (Forsk.) Decne. (vern Khipp (Sindhi)

- The watery juice is externally applied for ringworm.
- The plant is boiled in water and is given to cattle after the giving child birth/delivery for expel of placenta.
- The branches are also used for thatching of roof.
- The young branches are employed for making ropes.
- It is used as fodder for cattle especially for camel.
- Young twigs grind and poultice is made which is used externally for pain and inflammation.

Asteraceae

Conyza canadensis (L.) Conquist. (Giddar Buti (Sindhi)

- It is used as a fodder.
- Its boiled water is used for soreness of throat.

Launaea nudicaulis (L.) Hk. F. (Vern. Lassi Bhatter (Sindhi)

- It is reported as a fodder for cattle.
- The plant is crushed in water and is given in painful urination.

Pluchia lanceolata Oliv & Hiern. (Vern. Phar Buti, Resham (Sindhi)

- Fodder for cattle.
- Whole plant is crushed in water and used as a cooling agent.
- Grind leaves applied as a paste on hairs for keeping hairs healthy (Women).

Boraginaceae

Heliotropium crispum Desf. (Vern. Karsan (Sindhi)

- An infusion is made from plant is used in skin diseases.

Caesalpiniaceae

Cassia italica (Mill.) Lam. ex F.W. Anderssp. (Vern. Ghorawal (Sindhi)

- Leaves are boiled in tea is given for body pain.
- It is given to cattle for promotion of milk (Lactagogue).

Capparidaceae

Capparis decidua (Forssk.) Edgew. (Vern. Kirrer (Sindhi)

- Tree trunk is used as fuel. and used for supporting and building material.
- The unripe fruit is used as vegetables cooking and pickles.
- The ripened fruit is edible.
- The young twigs are used as fodder for camel.

Chenopodiaceae

Haloxylon recurvum (Moq.) Bunge ex Boiss. (Vern.Sacho Lano (Sindhi)

- The ash of the plant is used for washing of cloths.
- The plant is reported as a fodder for camel.

Salsola baryosma (Roem. & Schult.) Dandy. (Vern. Lani (Sindhi)

- The ash of the plant is used for washing of cloths.
- The plant is reported as a fodder for camel.

Saueda fruticosa (Linn.) Forsk. (Vern.Koori Lani (Sindhi)

- The ash of the plant is used for washing of cloths.
- The plant is reported as a fodder for camel.

Saueda nudiflora (Willd.) Moq. (Vern.Koori Lani (Sindhi)

- The ash of the plant is is used for washing of cloths.
- The plant is reported as a fodder for camel.

Convolvulaceae

Convolvulus arvensis Linn. (Vern. Naro (Sindhi).

- It is favorite fodder for cattle.
- Its paste is applied over insect bite and inflammation.

Convolvulus prostratus Forssk. (Vern. Kirhanj (Sindhi).

- The plant is crushed in water with *Piper nigrum* and is given in liver diseases.

Cressa cretica Linn. (Vern. Oin (Sindhi)

- The plant is regarded as a neutralizer of acidity of saline soils.
- The plant is good fodder for camel.

Cucurbitaceae

Citrullus colocynthis (Linn.) Schrad. (Vern. Trooh (Sindhi).

- The fruit is regarded as a highly purgative and is used in many recipes for digestive troubles in human being and livestock.
- The fruit is given with *Aloe barbadensis* as a veterinary medicine in constipation and indigestion for cattle.

Cucumis malo var. *agrestis* Naudin. (Vern. Mitero, Chibhar (Sindhi)

- It is taken as a wild fruit.
- The fruit is dried under shadow and used as flavoring agent in cooking vegetables.
- The chatni is also made from the ripened fruit.
- Fodder for cattle.

Euphorbiaceae

Euphorbia hirta Forsk. (Vern. Khira Wal (Sindhi) &
E. prostrata Ait. (Vern. Kheer Wal)

- Both are fodder for animals

Fabaceae

Alhagi maurorum Medic. (Vern. Kandero (Sindhi)

- The dried plants used for fencing boundary around huts.
- Bath is taken from the decoction of this plant for skin eruptions.

Crotalaria burhia *Ham. ex Bentham. (Vern. Chagg (Sindhi)*

- Soak roots in the water in new earthen pot for whole night. The following morning, it is crushed and obtained juice is being given three times a day for bleeding from nose. It acts as a cooling agent.
- It is used for thatching of roof.
- Making **Moi/Chadi** from this plant is very common, which is used in washing/cleansing pots. is also made from this plant which is used for the same purpose.
- Young twigs and leaves are used as fodder.
- The plant is reported as sand binder .

Tephorasia uniflora Pers. (Vern. Siringh, Andhri (Sindhi)

- The plant is regarded as cause of blindness in cattle.
- It is only reported as a fodder for cow/goat when it is dried.

Malvaceae

Abutilon indicum (Linn.) Sweet. (Vern. Pat Teer (Sindhi)

- Poultice is made from the leaves is used for boils.
- Fodder for cattle.

Mimosaceae

Acacia nilotica (Linn.) Delile. (Vern. Babur (Sindhi)

- Tree trunk is used as pillar in making huts and agricultural implements.
- Leaves, flowers fruits used as a fodder
- Fuel.

Acacia senegal (Linn.) Willd. (Vern. Angrazi Babur (Sindhi)

- Tree trunk is used as pillar in making huts and agricultural implements.
- Fruits (Pods) used as a fodder
- Fuel.

Prosopis cineraria (Linn.) Druce. (Vern. Kandi (Sindhi).

- Unripe pods used as a vegetable.
- Ripe fruit used as wild fruit.
- Tree trunk is used as pillar in making huts and agricultural implements.
- leaves, flowers fruits used as a fodder
- Fuel.

Molluginaceae

Glinus lotoides Linn. (Vern. Kotak (Sindhi)

- The plant is as an anthelmintic (Vermifuge: Killer for worms) in cattle.
- It is reported as a fodder

Mollugo cerviana (Linn.) Ser. (Vern. Hazar Dani (Sindhi)

- Plant is used as a fodder for cattle.

Nactaginaceae

Boerhavia procumbense Bank ex Roxb. (Vern. Dakhri/ Satti (Sindhi)

- It is cooked as a vegetable.
- It is utilized as a fodder for cattle.

Polygonaceae

Calligonium polygonoides Linn. (Vern. Phogg (Sindhi)

- Flowers of the plant are cooked as a vegetable.
- The leaves and flowers are used as a fodder for cattle.
- The dried and fallen leaves are soaked in water in earthen pot for 24 hours and are given to cattle in harsh summer and supposed as a cooling agent, which can prevent them from heat.
- The trunk and branches are used as a fuel.
- The root of the plant is used for dyeing the leather.
- The plant acts as sand binder.

Rhamnaceae

Zizyphus nummularia (Burm.f) Wight & Arn. (Vern. Jhangli Ber (Sindhi)

- Fruit edible.
- Leaves used as Fodder for cattle preferred by goat..

Salvadoraceae

Salvadora oleoides Decne. (Vern. Khabbar (Sindhi).

- Ripe fruit used as wild fruit.
- Roots and twigs are used as a tooth sticks.
- Tree trunk is used as pillar in making huts.
- leaves, flowers fruits are favourite fodder for camel.
- Fuel.

Tiliaceae

Corchorus depressus (Linn.) Stocks (Vern. Mundheri (Sindhi)

- The whole plant is crushed in water along with sugar which is locally known as **"Thadal"** and regarded a cooling agent given in summer.
- It is also reported as a fodder for cattle.

Zygophyllaceae

Fagonia indica var. *schweinfurthii* Hadidi (Vern. Damaho (Sindhi)

- The decoction of the whole plant mixed with sugar is given female for menorrhagia (frequent bleeding; if cycle disturbed).
- The decoction of the plant is used for bath to check some skin diseases.
- The powder made from the whole plant is being dusted on boils and skin eruptions.

Tribulus lsongipetalus Viv. & *Tribulus terrestris* Linn.
(Vern. Bakhro, Bhurt (Sindhi)

- The fruit is ground in water and is regarded as a cooling agent. It is given painful urination.
- The leaves are used as a vegetable.
- It is also reported as a fodder for cattle.
- The whole plant is crushed in water and given in spermatorrhia.

Zygophyllum simplex Linn (Jand Lani (Sindhi)

- It is reported as a fodder for camel.

Table 1. Showing species and their uses.

Families/Plant species	Fodder		Ailments		House Hold Uses		
	Animals	Human	Human	Animals	Agri. Impl.	Building	Others
POACEAE							
Cynodon dactylon (Linn.) Pers.	X		X				
Desmostachya bipinnata (Linn.) Stapf.	X		X				X
Eragrostis minor Host.	X						
Leptochloa panicea (Retz.) Ohwi.	X						
Saccharum bengalensis Retz.	X			X	X		
AIZOACEAE							
Zaleya pentandra (Linn.) Jaffrey	X						
AMARANTHACEAE							
Achyranthes aspera Linn.	X						
Aerva javanica (Burm. f.) Juss ex J. A. Shultes.	X		X	X			
Amarathus virdis Linn.	X	X					
Digera muricata (Linn.) Mart.	X	X					
ASCELPIADACEAE							
Calotropis procera (Willd.) R. Br.	X		X	X			
Leptadenia pyrotechnica (Forssk.) Decne.	X		X	X			
ASTERACEAE							
Conyza canadensis (Linn.) Conquist.	X		X				
Launaea nudicaulis (Linn.) Hk. f.	X		X				
Pluchia lanceolata Oliv & Hiern.	X		X				
BORAGINACEAE							
Heliotropium crispum Desf.	X		X				
CAESALPINIACEAE							
Cassia italica (Mill.) Lam ex F.W. Anderssp.	X		X	X			
CAPPARIDACEAE							
Capparis decidua (Forssk.) Edgew.	X	X	X	X		X	X
CHENOPODIACEAE							
Haloxylon recurvum (Moq.) Bunge ex Boiss.	X						X
Salsola baryosoma (Roem & Schult.) Dandy.	X						X
Saueda fruticosa (Linn.) Forsk.	X						X
Saueda nudiflora (Willd.) Moq.	X						
CONVOLVULACEAE							
Convolvulus arvensis Linn.	X	X					
Convolvulus prostratus Forssk.	X	X					
Cressa cretica Linn.	X						
CUCURBITACEAE							
Citrulus colocynthis (Linn.) Schrad.			X	X			
Cucumis malo var. *agrestis* Naudin.	X	X					
EUPHORBIACEAE							
Euphorbia hirta Forsk.	X						
Euphorbia prostrata Ait.	X						
FABACEAE							
Alhagi maurorum Medic.	X		X			X	X
Crotalaria burhia Ham ex Bentham	X		X			X	X
Tephrosia uniflora Pers.	X						
MALVACEAE							
Abutilon indicum (Linn.) Delile.	X					X	
MIMOSACEAE							
Acacia nilotica (Linn.) Delile.	X				X	X	X
Acacia senegal (Linn.) Willd.	X				X	X	X
Prosopis cineraria (Linn.) Druce.	X	X			X	X	X
MOLLUGINACEAE							
Glinus lotoides Linn.	X			X			
Mollugo cerviana (Linn.) Ser.	X						
NYCTIGINACEAE							
Boerhavia procumbense Bank ex Roxb.	X						
POLYGONACEAE							
Calligonium polygonoides Linn.	X	X		X			
RHAMNACEAE							
Ziziphus nummularia (Burm.f.) Wight & Arn.	X	X				X	X
SAVADORACEAE							
Salvadora oleoides Decne.	X	X				X	X
TILIACEAE							
Corchorus depressus (Linn.) Stocks.	X	X	X				
ZYGOPHYLLACEAE							
Fagonia indica var. *schweinfuthii* Hadidi.	X		X				
Tribulus longipetalus Viv.	X	X	X				
Tribulus terrestris Linn.	X	X	X				
Zygophyllum simplex Linn.	X						

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