

ETHNOMEDICINAL USES OF HERBS FROM NORTHERN PART OF NARA DESERT, PAKISTAN

RAHMATULLAH QURESHI^{1,*} G. RAZA BHATTI²
AND RABIA ASMA MEMON³

¹Department of Botany, Pir Mehr Ali Shah Arid Agriculture University,
Murree Road, Rawalpindi, Pakistan

²Department of Botany, Shah Abdul Latif University, Khairpur, Sindh, Pakistan.

³Institute of Plant Sciences, University of Sindh, Jamshoro, Pakistan

Abstract

Ethnobotanical survey of Nara Desert, Sindh, Pakistan was carried out during 1998-2001. Local inhabitants are extremely knowledgeable about the utilization of indigenous flora of the study area. They use them in fever, flu, cough, asthma, digestive troubles, piles, diabetes, urinary diseases, male sexual diseases, gynecological diseases, joints pain/rheumatic pains and inflammation, ear diseases, tooth problems, cuts and wounds, skin diseases, cooling agents and miscellaneous uses. In the present communication, 63 plant species belonging to 50 genera and 29 families are included. The major plant families which contributed in folk herbs included Fabaceae (7 spp.), Boraginaceae (6 spp.), Amaranthaceae (5 spp.) and Cucurbitaceae (4 spp.). For each species, botanical name, vernacular name, part(s) used, medicinal use, method of preparation and applications of the herbal remedies are provided.

Introduction

Primitive people chiefly depend on plants for their survival. They acquired knowledge of medicinal plants by methods of trial and error. Consequently, they became the store-house of knowledge of useful as well as harmful plants, accumulated and enriched through generations and passed on from one generation to another, after refining and additions. Many people, especially in the poor, underdeveloped countries, rely on wild plant resources for food, construction materials, fuel wood, medicine and various other purposes. Worldwide, it is an established fact that indigenous communities are extremely knowledgeable about plants and other natural resources on which they are immediately and intimately dependent. Unfortunately, much of this wealth of knowledge is very fragile today due to erosion of traditional cultures. Ethnobotanists can play very important roles in rescuing this disappearing knowledge and returning it to local communities. It is, therefore, important that before this rich unwritten folklore on uses of plants and plant resources becomes lost forever through the recent accelerated 'civilization' of the aborigines (tribal), it should be properly documented and preserved (Rao & Henry, 1997).

Worldwide this field is well established and a lot of work has been done. Coe (2008) reported ethnobotany of Rama of South eastern Nicaragua. He reported a total of 249 plant species belonging to 190 genera and 78 families found to be used variously by Rama group. He further classified plants into medicinal (190 species), food (80 species), whereas 99 species had other uses.

Previously, Qureshi & Bhatti (2007) reported an ethnobotanical study on wild gourd (*Citrullus colocynthis*) from Nara Desert, Sindh. They described detail of taxonomic and ethnomedicinal approach of the plant from Nara Desert, Sindh. In continuation of that,

*Corresponding author: rahmatullahq@yahoo.com, phytotaxonomist@gmail.com.

Qureshi & Bhatti (2008) carried out an extensive ethnobotanical survey from Nara Desert, Pakistan. They reported 51 plant species belonging to 43 genera and 28 families which are being used medicinally by local inhabitants of the Nara Desert. They reported 21 species possessing new uses not being recorded in the Indo-Pak medicinal literature.

Study area: The Nara Desert situated between (26°-28° N, 68°-70° E) in Sindh province, Pakistan (Bhatti *et al.*, 2001). This desert is comprised of about 23000 km². The altitude is between 50 and 115 meters above sea level. It spreads over from Taluka Ubaro, Deharki, Mirpur Mathelo & Khan Pur Mahar of Ghotki District, Rohri and Saleh Pat taluka of Sukkur District, Nara, Kotdeji and Faiz Ganj Talukas of Khairpur district; Taluka Sanghar and Khipro of district Sanghar. Eastern side boundaries of all these talukas have been marked by Rajasthan, India (Jodhpur & Jaisalmer).

This desert is semiarid in nature and represents mean rainfall ranges from 88 to 135 mm, mostly receive during the monsoon (mid July to end of the August) with mean minimum and maximum temperatures 20° and 45°C, respectively (Qureshi & Bhatti, 2005a).

The vegetation in this region is sparse consisting mainly of stunted, thorny or prickly shrubs and perennial herbs capable of drought resistance. Trees are few and scattered. 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 (Qureshi, 2004). This desert sustains a relatively high human and livestock populations i.e., 1.05 and 1.25 million, respectively (Anon., 1992). The livelihood of the people of Nara desert is largely dependent on their livestock i.e., sheep, goat and camels. Agriculture is in practice on both the flanks the right and left sides of Nara canal of this desert. It lies in the same topographical region, but the land under cultivation has been physically modified to receive water for irrigation purpose from the Nara canal. The outer most boundaries are intermingled with desert habitat. Cotton and *Guwar* are the major crops of Kharif season whereas; the wheat, *Brassica* and *Alfalfa* are cultivated in Rabbi season (Qureshi & Bhatti, 2005b).

The aim of this survey was to record the medicinal uses of herbs from the local herbalists (*Hakeems*) and elderly known people of the study area. The ethnobotany of the Nara Desert is sporadically known. However, some papers have been written by the authors from the study area (Bhatti *et al.*, 1998, 2001; Qureshi, (2002); Qureshi & Bhatti, 2007; 2009; Qureshi *et al.*, 2001).

Materials and Methods

This work is based on intensive and extensive exploration of the Nara Desert by collecting plant specimens with regular intervals during 1998-2001. A semi-structured questionnaire was designed to collect information about medicinal uses of the local flora following Qureshi *et al.*, (2001). One hundred persons (25 herbal practitioner, 10 herbal veterinarian, 5 women and 60 elderly persons) of 40-60 years of age group were interviewed to get local/vernacular names of taxa and their traditional uses. Folklore medicinal uses were matched with Indo-Pak medicinal literature (Ambasta, 1986; Anon., 1950, 1956, 1959, 1962, 1976 and 1978; Kritikar & Basu, 1918; Nadkarni, 1954; Dastur, 1962; Baquar & Tasnif, 1984; Murray, 1989; Sivarajan & Balachandran, 1996; Asolkar *et al.*, 1992; Dymock *et al.*, 1972) to confirm their uses and any novelty use. Plant specimens were collected and identified with the help of various Floras (Jafri, 1966;

Nasir & Ali, 1970-1989; Batanouny, 1981; Ali & Nasir 1989-1991; Ali & Qaiser, 1993-1995, 2000-2004; Matthew, 1981-83; Shetty & Singh, 1987, 1991; Bhandari, 1987). The voucher specimens were deposited in the Shah Latif University Botanical Garden & Herbarium (SLUBGH), Khairpur, Pakistan.

Results

During the survey, 63 herbs belonging to 50 genera and 29 families were identified with medicinal uses. The major plant families which contributed in folk medicine were Fabaceae (7 spp.), Boraginaceae (6 spp.), Amaranthaceae (5 spp.), Cucurbitaceae (4 spp.), Asteraceae, Capparidaceae, Convolvulaceae, Poaceae, Scrophulariaceae & Zygophyllaceae (3 spp. each), Aizoaceae, Euphorbiaceae, Liliaceae & Solanaceae (2 spp. each), while remaining 15 families had one species each. In addition, 8 species belonging to 6 families had ethnoveterinary importance. All the plants are alphabetically arranged. For each species, plant family; botanical name; voucher specimen number; local names; preparations and ailments treated are provided.

The detailed description of medicinal uses/advantages of herbs from Nara Desert, Pakistan is as follows:

Family: Acanthaceae

- 1 **Botanical name:** *Blepharis sindica* Stocks ex. Anders (SLUBGH 147)

Local name: Utangan

Medicinal uses: The powder of seeds is used in spermatorrhoea.

Family: Aizoaceae

- 2 **Botanical name:** *Gisekia pharancoides* Linn. (SLUBGH 48)

Local name: Moraaho

Medicinal uses: The poultice made of leaves is applied on sores in cattle.

- 3 **Botanical name:** *Zelya petandra* (Linn.) Jeffrey. (SLUBGH 98)

Local name: Wasanh/Waaho

Medicinal uses: The powder of the root along with black pepper and honey is given in cough, phlegmatic cough and flue.

Family: Amaranthaceae

- 4 **Botanical name:** *Achyranthes aspera* Linn. (SLUBGH 325)

Local name: Ubat Kandri

Medicinal uses: The powdered of the roots mixed with honey is used in cold humors i.e. asthma, cough, cold, pneumonia and joints pain. The paste made up of roots is applied to cuts to stop bleeding. The roots are used as a tooth stick for cleaning the teeth. Fresh leaves are crushed with black pepper and given in intermittent fever. The leaves are ground to form paste which is externally applied to insect bites, to hasten the maturity of abscess and to expel thorn from the feet. Tea is made from inflorescence and seeds for cough, cold, nausea, chest pain, fever and colic. The paste of the inflorescence is used in scorpion bite. The ash soaked in water for 48 hours is dried over fire and residual powder is used in acidity, stomach pain, cough, cold, fever, rheumatic pain, piles, leprosy and micturation.

Veterinary uses: The decoction of the plant is given to cattle for cough, indigestion, joint pain and inflammation of the breast. The paste made by the plant is applied to heal the wounds of cattle especially of camels.

- 5 **Botanical name:** *Aerva javanica* var. *bovei* Webb. (SLUBGH 56)
Local name: Booh
Medicinal uses: The decoction as a gargle for toothache. Paste made up of leaves and inflorescence is externally applied to heal the wounds and inflammation of human being as well as livestock. The cottony seeds for stuffing pillow used in chorea and lumber pain. The decoction purgative and anthelmintic in cattle.
- 6 **Botanical name:** *A. javanica* var. *javanica* (Burm. f.) Juss ex J. A. Shultes. (SLUBGH 57)
Local name: Booh
Medicinal uses: Same as for *Aerva javanica* var. *bovei*
- 7 **Botanical name:** *Amaranthus viridis* Linn. (SLUBGH 219)
Local name: Mariro
Medicinal uses: The paste of the root is applied on scorpion sting. It is used as a potherb for the alleviation of heat from the body. It is also supposed to be effective in kidney and gall bladder stones when used as potherb.
- 8 **Botanical name:** *Digera muricata* (Linn.) Mart. (SLUBGH 157)
Local name: Lulur
Medicinal uses: Plant is used as potherb and reported as a laxative agent.
Family: Aristolochiaceae
- 9 **Botanical name:** *Aristolochia bracteolata* Lamk. (SLUBGH 315)
Local name: Kabar
Medicinal uses: Juice of leaves applied to ulcer, eczema and skin eruption.
Family: Asteraceae
- 10 **Botanical name:** *Amberboa ramosa* (Roxb.) Jafri. (SLUBGH 209)
Local name: Lubh
Medicinal uses: Plant is boiled in water and bath is taken for skin irritation. Two-gram powder of the plant is given before the period of malarial/intermittent fever and continued for 3 days to cure fever. Juice of the fresh plant along with black pepper is given for blood purification.
- 11 **Botanical name:** *Echinops echinatus* DC. (SLUBGH 153)
Local name: Kanderi Bhattar
Medicinal uses: Powder of root's bark along with candy is given sexual debility.
- 12 **Botanical name:** *Launaea procumbens* (Roxb) Ramayya & Rajagopal. (SLUBGH 107)
Local name: Lassi Bhattar
Medicinal uses: The plant is grinded in water along with candy (*Misri*) and is given orally for painful micturation.
Veterinary use: The forage used for cattle is believed that it acts as galactagogue.
Family: Boraginaceae
- 13 **Botanical name:** *Arnebia hispidissima* (Sieber) DC. (SLUBGH 692)
Local name: Khari
Medicinal uses: Paste of the roots applied on inflamed injury.
- 14 **Botanical name:** *Heliotropium crispum* Desf. (SLUBGH 111)
Local name: Kharsan
Medicinal uses: The dried plant along with candy (*Misri*) is grinded in water and is used as cooling agent.
Veterinary uses: It is given to cattle for increase in lactation.

- 15 **Botanical name:** *H. curassavicum* Linn. (SLUBGH 113)
Local name: Uth Chaaro
Medicinal uses: Paste of the roots is applied on boils.
- 16 **Botanical name:** *H. europaeum* Linn. (SLUBGH 124)
Local name: Uth Chaaro
Medicinal uses: Leaves are boiled in sessamum oil and applied on pimples and skin eruption.
Veterinary uses: Wounds of the cattle are washed from the fresh juice of the plant.
- 17 **Botanical name:** *H. strigosum* Willd. (SLUBGH 107)
Local name: Kharsan
Medicinal uses: Paste made up of leaves is applied on wound.
- 18 **Botanical name:** *Trichodesma indicum* (Linn.) R.Br. (SLUBGH 221)
Local name: Gaozeban
Medicinal uses: Five gram dried leaves and flowers are boiled in water and slightly sweetened with honey which is given in flue and cough to cure.
Family: **Caesalpiniaceae**
- 19 **Botanical name:** *Senna italica* (Mill.) F.W. Andr. (SLUBGH 139)
Local name: Ghorawal
Medicinal uses: Leaflets without petioles are beaten and obtained powder is used in given in 0.25 gram dose along with honey for backache, sciatic, joints pain and headache and migraine.
Veterinary uses: The whole plant is given to cattle for rheumatic/joints pains. The same practice is supposed to be effective for increasing milk production (Lactagogue).
Family: **Capparidaceae**
- 20 **Botanical name:** *Cleome brachycarpa* Vahl. (SLUBGH 35)
Local name: Dhanar Khathuri
Medicinal uses: The whole plant is boiled into sesame oil, which is applied over joint pain and inflammation. The powder of the leaves is given in pain and inflammation.
- 21 **Botanical name:** *Gynandropsis gynandra* (Linn.) Briq. (SLUBGH 39)
Local name: Kinro
Medicinal uses: The decoction of leaves is used in chronic fever. Leaves are applied to prevent the pus formation of boils. The juice of the leaves is poured into ears for earache and otalgia. The seeds paste is applied externally to expel the vermin from the hairs.
- 22 **Botanical name:** *C. viscosa* Linn. (SLUBGH 38)
Local name: Kinni Buti
Medicinal uses: Juice of the leaves is poured in ears for infection, pain and deafness. Leaves are used a potherb for piles and dysentery. Leaves are coated with sesamum oil and warmed over fire, which are applied over pain and inflammation of the boils. The boiled water of leaves is applied over bleeding piles. Seeds are macerated into paste and are applied over ringworm.
Family: **Chenopodiaceae**
- 23 **Botanical name:** *Chenopodium album* Linn. (SLUBGH 1295)
Local name: Chill
Medicinal uses: Whole plant is used as potherb used as laxative to cure constipation.

Family: Convolvulaceae

- 24 **Botanical name:** *Convolvulus arvensis* Linn. (SLUBGH 59)

Local name: Naaro

Medicinal uses: Four grams of the powder of dried plant is mixed with 1 gram molasses (*Gurr*) and globules of 250 mg made. One or two globules are given with milk to cure constipation at night. The paste made up of leaves is applied on boils and inflammation. Six gram fresh plant is grinded with 7 black peppers in water. This mixture is given for a week in bleeding piles.

- 25 **Botanical name:** *C. prostratus* Forssk. (SLUBGH 62)

Local name: Kirhanj

Medicinal Uses: Whole plant is crushed in water with few black pepper and candy (*Misri*) and obtained mixture is given few days to cure chronic fever and Jaundice. The powder of the whole plant is given twice a day with milk as nerve tonic. The powder of the root bark along with candy (*Misri*) is given twice a day for spermatorrhoea and general debility.

- 26 **Botanical name:** *Cressa cretica* Linn. (SLUBGH 85)

Local name: Oin

Medicinal uses: The whole plant is crushed in water with few black pepper and candy (*Misri*) and obtained mixture few days to cure chronic fever and Jaundice diseases. Paste of the leaves is applied on sores.

Family: Cucurbitaceae

- 27 **Botanical name:** *Citrullus colocynthis* (Linn.) Schrad. (SLUBGH 167)

Local name: Trooh

Medicinal uses: Oil obtained from seeds is applied on head for hair loss. Fresh juice of the leaves is externally applied daily for a month, which is claimed to be effective in baldness. Fresh juice of *Colocynth* is mixed with equal quality of Sodium chloride. It is warmed over fire till it dries up. This power is given 1 gram twice a day after meal as a stomachic and appetizer given in constipation.

Veterinary uses: The half piece (approx. 100 grams) of ripened fruit is given twice a day to cattle for treating indigestion, colic pain, cough and intestinal worms.

- 28 **Botanical name:** *Cucumis melo* var. *agrestis* Naudin (SLUBGH 147)

Local name: Chibbar/Mitero

Medicinal uses: The ripened fruit is cut into pieces and dried, which is used as a condiment in cooking vegetables especially in carrot, acts as mild laxative.

- 29 **Botanical name:** *C. prophaterum* Linn. (SLUBGH 1257)

Local name: Kandan Mitero

Medicinal uses: The plant is regarded as emetic and purgative. Root is used in fever.

- 30 **Botanical name:** *Mukia maderaspatana* (Linn.) M. J. Roem. (SLUBGH 899)

Local name: Chibhari Wal

Medicinal uses: The plant is prescribed against chronic diseases with cough. The decoction of root is useful in flatulence and when masticated relieves toothache.

Family: Cuscutaceae

- 31 **Botanical name:** *Cuscuta chinensis* Lam. (SLUBGH 138)

Local name: Wan Werhi

Medicinal uses: The paste of plant is applied on chronic ulcer, wounds. Poultrice is applied on painful inflammations.

Family: Cyperaceae

- 32 **Botanical name:** *Cyperus rotundus* Linn. (SLUBGH 149)
Local name: Kabah
Medicinal uses: The roots are boiled along with equal quantity of *Mint* (*Mintha piperata*) and given in cholera. Roots along with turmeric and curd are made into a paste and are applied on face for pimples and beautification. Paste of the roots is applied on breasts to increase lactation.
Family: Euphorbiaceae
- 33 **Botanical name:** *Euphorbia hirta* Linn. (SLUBGH 246)
Local name: Kheera Wal
Medicinal uses: Herb is expectorant, anthelmintic and used in bronchial affections, cough, asthma, bowel complaints and against worms.
- 34 **Botanical name:** *E. thymifolia* Linn. (SLUBGH 247)
Local name: Kheer Wal
Medicinal uses: The powder of the dried plant is given in diabetes.
Family: Fabaceae
- 35 **Botanical name:** *Alysicarpus monilifer* (Linn.) DC. (SLUBGH 1117)
Local name: Unknown
Medicinal uses: Paste is used in the treatment of skin eruptions of children.
- 36 **Botanical name:** *Crotalaria burhia* Hamilt. ex Benth. (SLUBGH 202)
Local name: Chagg
Medicinal uses: The plant is supposed to possess cooling properties.
- 37 **Botanical name:** *Indigofera linifolia* (L.f.) Retz. (SLUBGH 539)
Local name: Vekar
Medicinal uses: Plant is used in febrile eruptions and amenorrhea. The seeds are nutritive.
- 38 **Botanical name:** *I. oblongifolia* Forsk. (SLUBGH 278)
Local name: Jhill
Medicinal uses: Twigs are used as a tooth brush to strengthen teeth.
- 39 **Botanical name:** *Tephrosia falciformis* Romaswami. (SLUBGH 106)
Local name: Drebbar
Medicinal uses: Seeds are given in rheumatic pains.
- 40 **Botanical name:** *T. uniflora* Pers. (SLUBGH 279)
Local name: Siringh/Andhri
Medicinal uses: The boiled leaves are eaten for the treatment of syphilis.
Note: The plant is known to cause temporary blindness/poisonous to cattle.
- 41 **Botanical name:** *T. villosa* (Linn.) Pers. (SLUBGH 987)
Local name: Siringh/Andhri
Medicinal uses: Juice of the leaves is given in dropsy.
Note: The plant is known to cause temporary blindness/poisonous to cattle.
Family: Fumariaceae
- 42 **Botanical name:** *Fumaria indica* (Haukskn.) H.N. Pugsley. (SLUBGH 211)
Local name: Shahatro
Medicinal uses: The whole plant is boiled in water and is used in itching, pimples and boils of skin.
Family: Lamiaceae
- 43 **Botanical name:** *Leucas aspera* (Willd.) Link. (SLUBGH 41)

Local name: Goomi Buti

Medicinal uses: The plant is crushed in little quantity of water and warmed over fire. When it turned into a paste then it is applied on inflamed parts to relieve pain and inflammation. The decoction of the plant along with 1-2 seeds of *Syzegium arometicum* is given to patient suffering from chronic phlegmatic fever.

Family: Liliaceae

- 44 **Botanical name:** *Aloe barbadensis* Miller. (SLUBGH 168)

Local name: Kunwar Buti

Medicinal uses: Ammi (*Trachyspermum ammi*) soaked in the juice of *Aloe barbadensis* is dried and made in powder which is given thrice a day for constipation, digestive troubles and inflammation of the abdominal viscera. Pulp of the leaf of Aloe and chicory (*Cichorium intybus*) are soaked in water at night and this water is given to the patients of irritant and itching skin for relief. The pulp is fried in equal quantity of clarified butter (*ghee*) and mixed with flour and candy. This sweet dish is given in rheumatic pain and as a general tonic. The dried juice “Aloes” is mixed with dried grapes (*Vitis vinifera*) and dried bitter cucumber (*Citrullus colocynthis*). This mixture is effective in constipation, piles and rheumatic pain. The fresh piece of the pulp is kept open in earthen pot at night. This is given in dose of approximately 10 gram daily in early morning before breakfast for jaundice. The pulp is externally applied to relieve the pain and inflammation of piles. Fresh gel is also applied for relief of burns, cuts and wounds. The pulp and turmeric (*Curcuma longa*) are slightly warmed and used as poultice for tonsils, inflamed joints and other local pains.

Veterinary uses: Sodium chloride is dusted on a leaf and is given to cattle thrice a day in cough, asthma, indigestion and anorexia. It is also useful for them in spasmodic pain, rheumatic pain and loss of appetite.

- 45 **Botanical name:** *Asphodelus tenuifolius* Cavan. (SLUBGH 115)

Local name: Basri

Medicinal uses: Seeds are given in piles.

Family: Molluginaceae

- 46 **Botanical name:** *Glinus lotoides* Linn. (SLUBGH 37)

Local name: Kotak

Medicinal uses: The Poultice made up of leaves is applied over wounds and inflammation. The plant is grinded in water and is given orally as blood purifier used in syphilis. Ten gram fresh leaves of the plant crushed in 100 ml water and given 7 days to expel intestinal worms.

Family: Neuradaceae

- 47 **Botanical name:** *Neurada procumbens* Linn. (SLUBGH 91)

Local name: Chhipri

Medicinal uses: The dried spiny fruit is crushed in water along with equal quantity of *Corchorus depressus*, poppy seeds (*Papaver somniferum* L.), rose flower (*Rosa damascena* Miller), almond (*Prunus amygdalis* Batsch), and cardamom seed (*Elettaria cardamomum* (L.) Maton) and candy (*Misri*) which is locally known as “Thadal” and regarded a cooling agent given in summer. This recipe is said to be very effective demulcent and strong tonic especially for male. In winter season, the powder made up of dried fruit of *Neurada procumbens* along with equal quantity of dried fruits is given daily 1 tea spoon at night with milk for general and nerve tonic especially for male. This is also reported as a strong stimulant for debility and impotency.

Family: Nyctaginaceae

- 48 **Botanical name:** *Boerhavia procumbens* Banks ex Roxb. (SLUBGH 105)

Local name: Dakhri/Satti

Medicinal uses: The leaves of the plant are cooked as potherb and are given in edema and dropsy. Fifty ml juice of the plant is given thrice a day in dysmenorrhea. The powder of the dried roots is snuffed in flue. The powder of the roots along with honey is given in cough and asthma.

Family: Orobanchaceae

- 49 **Botanical name:** *Cistanche tubulosa* (Schrenk) Hook. f. (SLUBGH 1127)

Local name: Bhunjro

Medicinal uses: The powder of the plant is given in diarrhea.

Family: Poaceae

- 50 **Botanical name:** *Cymbopogon jwarancusa* (Jones) Schult. (SLUBGH 96)

Local name: Kattan

Medicinal uses: The decoction of the leaves, flowers and roots is given in seasonal fevers and catarrhal complaints. The plant is soaked in water with a suitable quantity of gur (*Molasses*) for 12 hours. Then this is boiled and is used in cough, asthma, and tuberculosis. The dried leaves and flowers are used as a tea, are supposed as valuable in flue, and cough. It is also used as a carminative and stimulant. The whole fresh plant is burnt in the sesame oil. It is refined and is externally applied over backache, rheumatic pain and other acute pain. The plant is crushed in water and made into poultice, which is applied over painful joints and inflamed area. The infusion of the plant is used as a gargle for toothache and strengthens the gums.

Veterinary uses: The decoction made up of *Cymbopogon jwarancusa*, seeds of *Trigonella foenum-graceum* and sugar (*Gurr*) given to the cattle for the replacement of the placenta after childbirth and it is also used for the inflammation of the breast of the cattle.

- 51 **Botanical name:** *Cynodon dactylon* (Linn.) Pers. (SLUBGH 128)

Local name: Chhabar

Medicinal uses: The paste made of fresh leaves is applied on cuts and bleeding wounds and bleeding piles. 5-10 drops juice of the plant is inhaled to stop bleeding from the nose. Juice of the plant is given in fever and diarrhea.

- 52 **Botanical name:** *Desmostachya bipinnata* (Linn.) Stapf. (SLUBGH 221)

Local name: Drabh

Medicinal uses: Poultice made of roots is applied on carbuncle. Roots are grinded in water and added along with some amount of milk and are given in piles and dysuria. Roots grinded with few black pepper in water and is administered orally in cholera.

Family: Polygonaceae

- 53 **Botanical name:** *Polygonum plebejum* R.Br. (SLUBGH 133)

Local name: Kheer Wal

Medicinal uses: Infusion of whole plant is used as cardiontonic, haemetonic. Six gram plant crushed with 5 black pepper in water and given in cholera.

Family: Scrophulariaceae

- 54 **Botanical name:** *Anticharis glandulosa* Aschers. (SLUBGH 149)

Local name: Gaamesh

Medicinal uses: Leaves and flowers boiled in sesame oil and that is dropped into ear to cure earache. The whole plant is dried and made into powder which is used as bath shampoo.

- 55 **Botanical name:** *Bacopa monnieri* Pennell. (SLUBGH 273)
Local name: Brambhi Buti
Medicinal uses: The whole plant crushed in water with few black pepper and is given as blood purifier.
- 56 **Botanical name:** *Kickxia ramosissima* (Wall.) Janchen. (SLUBGH 213)
Local name: Wal
Medicinal uses: The powder of whole plant is given in diabetes.
Family: Solanaceae
- 57 **Botanical name:** *Solanum surattense* Burm.f. (SLUBGH 165)
Local name: Kanderi Wal
Medicinal uses: The decoction made up of root of *Solanum surattense* along with the stem of *Tinospora cordifolia* is used in phlegmatic fevers and cough. The decoction of the roots along with equal quantity of fruits of *Piper longum* and honey is given to patient suffering from phlegmatic cough and asthma. The decoction of the fruits along with honey in one ounce is given twice a day in bronchial asthma. Powder of the dried ripened fruits is snuffed for headache and migraine. Juice of the leaves along with the powder of few seeds of *Piper nigrum* is orally used in joints pain. Powder of the ripened fruits along with honey is given orally in cough and asthma.
- 58 **Botanical name:** *S. nigrum* var. *nigrum* Linn. (SLUBGH 212)
Local name: Kanwal Buti
Medicinal uses: Warmed leaves are applied to painful and swollen testicles. Fresh juice added with the pulp of *Cassia fistula* is used as gargle for diphtheria, tonsillitis and inflammation of the tongue. Juice of the leaves is given orally for jaundice and inflammation of the liver.
Family: Tiliaceae
- 59 **Botanical name:** *Corchorus depressus* (Linn.) Stocks. (SLUBGH 333)
Local name: Mundheri
Medicinal uses: The whole plant is crushed in water along with equal quantity of poppy seeds (*Papaver somniferum* Linn.), rose flower (*Rosa damascena* Miller), almond (*Prunus amygdalis* Batsch), cardamom seed (*Elettaria cardamomum* (L.) Maton) and candy (*Misri*) which is locally known as “*Thadal*” and regarded a cooling agent given in summer. This is a good formula for spermatorrhoea and other male urino-genital diseases.
- 60 **Family:** Verbenaceae
Botanical name: *Phyla nodiflora* (L.) Greene. (SLUBGH 210)
Local name: Bukkan
Medicinal uses: The whole plant grind in water with Black pepper and candy and given in Micturation, dysuria and bleeding piles.
Family: Zygophyllaceae
- 61 **Botanical name:** *Fagonia bruguieri* var. *rechingeri* Hadidi. (SLUBGH 311)
Local name: Dramaaho
The powder made up of whole plant is dusted on boils and skin eruptions. Whole plant is boiled in water and its bath is taken for allergies and other skin diseases. The decoction of plant is given orally for skin eruption.
- 62 **Botanical name:** *F. indica* var. *schweinfurthii* Hadidi. (SLUBGH 312)
Local name: Dramaaho
Medicinal uses: Same as for *Fagonia bruguieri* var. *rechingeri*
- 63 **Botanical name:** *Tribulus terrestris* Linn. (SLUBGH 317)
Local name: Bakhro

Medicinal uses: Leaves are used as a potherb for nephritis, albuminaria, gonorrhea and micturation. The fruits are grinded in water and are used in urinary calculi. Powder of the fruits are slightly fried in *Desi Ghee* and mixed with candy (*Misri*) and is given 10 grams twice a day for spermatorrhoea and general debility.

Discussion

The collected data was compared with Indo-Pak medicinal plant literature (Ambasta, 1986; Anon., 1950, 1956, 1959, 1962, 1976 and 1978; Kritikar & Basu, 1918; Nadkarni, 1954; Dastur, 1962; Dymock *et al.*, 1972; Baquar & Tasnif, 1984; Murray, 1989; Sivarajan & Balachandran, 1996; Asolkar *et al.*, 1992) and observed that out of 63 plant species, 23 plants have new uses and addition in the folk herbal medicinal literature (Table 1). Twenty ailments type were treated by the reported species. Besides, *Achyranthes aspera*, *Citrullus colocynthis*, *Cuscuta chinensis*, *Heliotropium europaeum*, *Solanum surattense* and *S. nigrum* possessed some additional uses along with previously known. Whereas, the use of *Aerva javanica*, *Aloe barbadensis*, *Amaranthus viridis*, *Chenopodium album*, *Cleome viscosa*, *Convolvulus arvensis*, *Corchorus depressus*, *Cucumis melo* var. *agrestis*, *Cymbopogon jwarancusa*, *Cynodon dactylon*, *Desmostachya bipinnata*, *Digera muricata*, *Gynandropsis gynandra*, *Heliotropium curassavicum*, *H. strigosum*, *Leucas aspera*, *Tribulus terrestris*, *Trichodesma indicum* and *Zelya pentandra* were previously known.

Table 1. New usage of plants recorded from Nara Desert.

Usage	Plant species
Mouth gargle	<i>Chenopodium album</i>
Toothache	<i>Citrullus colocynthis</i> , <i>Indigofera oblongifolia</i>
Piles	<i>Asphodelus tenuifolius</i> , <i>Desmostachya bipinnata</i>
Bleeding piles	<i>Cleome viscosa</i> , <i>Convolvulus arvensis</i>
Micturition	<i>Launaea procumbens</i>
Backache, Sciatic, joints pain	<i>Senna italica</i> , <i>Tephrosia falciformis</i>
Chronic fever	<i>Convolvulus prostratus</i>
Jaundice	<i>Convolvulus prostratus</i>
Spermatorrhoea	<i>Echinops echinatus</i> , <i>Corchrus depressus</i>
Nerve tonic	<i>Convolvulus prostratus</i> , <i>Neurada procumbens</i>
General debility	<i>Neurada procumbens</i>
Diabetes	<i>Citrullus colocynthis</i> , <i>Euphorbia thymifolia</i>
Blood purifier	<i>Glinus lotoides</i> , <i>Fagonia</i> spp.
Ringworm	<i>Cleome viscosa</i>
Intestinal worms	<i>Glinus lotoides</i>
Earache	<i>Anticharis glandulosa</i>
Cooling agent	<i>Convolvulus prostratus</i> , <i>Corchrus depressus</i> , <i>Pluchea lanceolata</i>
Condiment	<i>Cucumis melo</i> var. <i>agrestis</i>
Local applications/External uses	
Sores/carbuncle	<i>Cressa cretica</i> , <i>Desmostachya bipinnata</i>
Wounds	<i>Glinus lotoides</i>

Previously, phytochemistry and pharmacological activities of reported plants are poorly known (Seshadri *et al.*, 1982; Said *et al.*, 1986; Rastogi & Mehrotra, 1993). Therefore, there is a dire need for further studies in order to identify new bioactive compounds from the reported species.

References

- Ali, S.I. and Y.J. Nasir (Eds.). 1990-1991. *Flora of Pakistan* (fascicles series 191-192). Islamabad, Karachi.
- Ali, S.I. and M. Qaiser (Eds.). 1993-2007. *Flora of Pakistan* (fascicles series 193-215). Islamabad, Karachi.
- Ambasta, S.P. 1986. *The useful plants of India*, CSIR, New Delhi.
- Anonymous. 1950. *The Wealth of India*, (Raw Materials), C. S. I. R, India, Vol. II.
- Anonymous. 1959. *The Wealth of India*, (Raw Materials), CSIR, India, Vol. V.
- Anonymous. 1976. *The Wealth of India*, (Raw Materials), CSIR, India, Vol. X.
- Anonymous. 1992. *Pak. Swiss Range and Livestock Improvement Project*.
- Anonymous. 1956. *The Wealth of India*, (Raw Material), CSIR, India, Vol. IV.
- Anonymous. 1962. *The Wealth of India*, (Raw Materials), C. S. I. R, India, Vol. V.
- Anonymous. 1978. *The Wealth of India*, (Raw Materials), C. S. I. R, India Vol. XI.
- Asolkar, L.V., K.K. Kakkar and O.J. Chakre. 1992. *Secondary Supplement to Glossary of Indian Medicinal Plants with Active Principles*, Publications and Information Directorate (CSIR), Dr. K.S. Krishnan Marg, New Delhi.
- Baqar, S.R. and M. Tasnif. 1984. *Medicinal Plants of Southern West Pakistan*, Periodical Expert Book Agency, D-42, Vivek Vihar, Delhi-113334.
- Batanouny, K.H. 1981. *Ecology and Flora of Qatar*. Centre for scientific and applied Research, University of Qatar, P.O. Box 2713, Doha.
- Bhandari, M.M. 1978. *Flora of Indian Desert*. Scientific Publishers, Jodhpur.
- Bhatti, G.R., M. Shah and R. Qureshi. 2001. Floristic Study of Arid Zone (Desert-Nara Region), Sindh, Pakistan Final Technical Report, PSF Project No. S-SALU/ENVR (45).
- Bhatti, G.R., R. Qureshi and M. Shah. 2001. Ethnobotany of Qadan Wari of Nara Desert. *Pak. J. Bot.*, 33 (especial issue): 801-812.
- Bhatti, G.R., R. Qureshi and S.M. Shah. 1998. Ethnobotany of *Calotropis procera* with special reference to the people of Nara Desert, Pakistan. *Scientific Sindh*, 5: 1-10.
- Boulos, L. 1991. *Flora of Egypt*. Al Hadara Publishing Cairo, Egypt, Vol. 1.
- Coe, F.G. 2008. Ethnobotany of the Rama of South eastern Nicaragua and Comparisons with Miskitu Plant Lore. *Economic Botany*, 62(1): 40-59.
- Dastur, J.F. 1962. *Medicinal plants of India and Pakistan*, D.B. Taraporevala, Bombay.
- Dymock, W., C.J.H. Warden and D. Hooper. 1972. *Pharmacographia Indica*, Hamdard Foundation, Nazimabad, Karachi, Pakistan, Vol. I-IV.
- Jafri, S.M.H. 1966. *The Flora of Karachi*. The Book Corporation, Karachi, Pakistan.
- Kritikar, K.R. and B.D. Basu. 1918. *Indian Medicinal Plants*, Indian Press, Allahabad, Vol. II-III.
- Martin, J. 1995. *Ethnobotany - A methods manual*. Chapman and Hall, London. 268.
- Matthew, K.M. 1981-3. *Flora of Tamilnadu Carnatic*. The Rapinat Herbarium, St. Joseph's College, Tiruchirapalli 620002, India, 1-3.
- Murray, J.A. 1989. *The Plants and Drugs of Sindh*, Indus Publications, Karachi.
- Nadkarni, A.K. 1954. *Indian Materia Medica*, Popular Prakashan Pvt. Ltd., Bombay, Vol. 1: 237-242.
- Nasir, E. and S.I. Ali. (Eds.), 1970-1989. *Flora of Pakistan (Fascicle series)*, Islamabad, Karachi.
- Qureshi, R. and G.R. Bhatti. 2007. Wild Gourd: A green medicine. *Hamdard Medicus*, 50 (1): 156-162.
- Qureshi, R. and G.R. Bhatti. 2008. Ethnobotany of plants used by the Thari people of Nara Desert, Pakistan. *Fitoterapia*, 79: 468-473.

- Qureshi, R. and G.R. Bhatti. 2009. Folklore uses Amaranthaceae family of Nara Desert, Sindh, Pakistan. *Pakistan Journal of Botany*. 41(3): 1565-1572.
- Qureshi, R. 2002. Ethnobotany of Rohri Hills, Sindh, Pakistan. *Hamdard Medicus*, 45(3): 86-94.
- Qureshi, R. 2004. *Floristic and Ethnobotanical Study of Desert Nara region, Sindh*. Ph.D. Thesis, Department of Botany, Shah Abdul Latif University, Khairpur, Sindh, Pakistan.
- Qureshi, R. and G.R. Bhatti. 2005a. Nara Desert, Pakistan: Part I: Soils, Climate and Vegetation. *Rangelands*, 27(5): 27-31.
- Qureshi, R. and G.R. Bhatti. 2005b. Nara Desert, Pakistan: Part II: Human Life. *Rangelands*, 27(5): 32-35.
- Qureshi, R., G.R. Bhatti and M. Shah. 2001. Ethnomedicinal properties of *Aloe barbadensis* Mill. with particular references the people of Nara Desert. *Hamdard Medicus*, XLIV (3): 46-50.
- Rao R.N. and A.N. Henry. 1997. The Ethnobotany of Eastern Ghats in Andhra Pradesh, India. Botanical Survey of India. 259.
- Rastogi, R.P. and B.N. Mehrotra. 1993. *Compendium of Indian Medicinal Plants*, CDRI, Luknow and PID, New Delhi, India, Vol.1-3.
- Said, H.M., V.D. Ahmad and A.U. Rahman. 1986. *Pakistan Encyclopedia Planta Medica*, Hamdard Foundation Press, Hamdard Centre, Nazimabad, Karachi-18, Pakistan.
- Seshadri, V., A.K. Batta and S. Rangaswami. 1982. *Indian. J. Chem. Sect. B*. 20B, (190, 773 (1981); *C.A.*, 96, 40794.
- Sivarajan, V.V. and I. Balachandran. 1996. *Ayurvedic Drugs and Plants Resources*, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, (1996).
- Shetty, B.V. and V. Singh. 1987 *Flora of Rajasthan*, Botanical Survey of India. Old Connaught Place Dehra Dun. Vol. I.
- Shetty, B.V. and V. Singh. 1991. *Flora of Rajasthan*, Botanical Survey of India. Old Connaught Place Dehra Dun. Vol. II.

(Received for publication 15 May 2009)