

Full Length Research Paper

Medicinal plants from salt range Pind Dadan Khan, district Jhelum, Punjab, Pakistan

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The paper presents ethno-medicinal information collected on 69 plant species belonging to 41 families from the salt range, Pind Dadan Khan, district Jhelum, Pakistan. The purpose of the study was to collect, codify and conserve indigenous traditional knowledge of local flora for the benefit of the community and its environment. The people have their distinct ways of life, beliefs and traditions; and have been using local plants for various purposes for generations. It was found that the community had a rich tradition of using plant resources for common ailments; and that it preferred plant based medicines, owing to their ready availability and low cost, with no stated side effects. It was found that the products, depending upon type, were formulated as powders, decoctions, leaf extracts or pastes, and were commonly used for prevalent disorders; and that the area is under intense deforestation, biotic interference and overgrazing. Consequently, valuable economic and medicinal plants are under threat of depletion at a rate that urgently calls for strategies aimed at sustainable utilization of these plants. As a first step, it is suggested that plant based industries and markets be better organized and promoted in such way that any plans for poverty alleviation are synchronized with those for conservation.

Key words: Medicinal plants, salt range, traditional knowledge, Pind Dadan Khan, conservation.

INTRODUCTION

Pind Dadan Khan is located between latitudes 32° 27 and 32° 45 North and longitudes 72° 35 and 73° 25 East. After the creation of district Chakwal and separation of Choa Saidan Shah the Tehsil presently comprises of a long strip of land, which is 95 km in length from east to west. The natural boundary to the north with district Chakwal is the salt range also known as the "Kohistan-e-Namak" (the biggest one in Asia) and in the south river Jhelum bifurcate it from district Sargodah and Mandi Bahauddin and in the west is district Khushab. The plain area including land under river is spread over 247,102 acres, whereas, the hilly area is 41,207 acres. Salt mines are spread over 2268 acres. The climate is semi-arid, hot sub-tropical continental and is characterized by hot summer and severe winters. May, June and July are the

hottest months; extreme maximum temperature may rise as high as 49°C during the month of June. There is gradual decline in the temperature (up to 34°C) in end of July and August due to rainfall and windstorms. The temperature remains nearly constant during October and November (25°C). December and January are the coldest months; the extreme minimum may drop as low as 2.0°C during the month of January. Frost may occur for a few days during the months of December and January. The Tehsil is exceptionally rich in minerals like limestone, salt, coal, gypsum and fire clay. The Khewra main mine is considered the second largest mine/deposit in the whole world. People of this area have their distinct way of life, beliefs, traditions and have been utilizing local plants for various purposes over generations. Some Ethnobotanical studies have also been carried out in different parts of Pakistan (Tariq et al., 1995; Shinwari and Khan, 1998; Badshah et al., 1996; Dastagir, 2001; Durrani et al., 2003; Gilani et al., 2003; Hussain et al.,

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1995, 2004, 2005; Hussain and Sher, 1998; Sher et al., 2003, 2004; Ibrar et al., 2007; Ahmad, 2007; Qureshi et al., 2007, 2008; Rahmatullah and Bhatti, 2008; Sheikh and Husain, 2008).

Studies have been conducted in the neighboring countries (Jain, 2001; Vetrichelvan and Jegdeesan, 2001; Rashid and Ahmad, 2003; Mahishi et al., 2005; Ignacimuthu et al., 2006; Jeruto et al., 2008; Gupta et al., 1997; Singh et al., 1997; Vedavathy and Mrudula, 1997; Siwakoti and Siwakoti, 1998; Khan, 1999; Mustafa et al., 2000; Ghimireet et al., 1999; Siddique et al., 2000). It is evident from the review of literature that no work on the medicinal plants of Pind Dadan Khan has been done. The present study reports the traditional utilization of plants of the area, which might be helpful for the future workers, ecologist, pharmacologists, taxonomists, wild life and water shed managers in their efforts involved in the development of this area.

MATERIALS AND METHODS

A survey of Pind Dadan Khan was conducted during 2005 to 2006 to document the medicinal uses of plants. Many villages on the basis of plant resources were visited in order to study the socioeconomic and ethno medicinal profile of the people of the area. Information about the plants surrounding these villages was collected from the local inhabitants of these villages. The information collected from the local tribal include local names, local uses, recipe preparation, parts used, occurrence, personalities involved in the collection, marketing and other related information. This information were collected through interviewing and filling questionnaires from drug dealers, shopkeepers, local hakims (Physicians), and farmers but priority was given to local elderly people and Hakims who were the real users and had a lot of information about the plants and their traditional uses. Literature survey and general observation adds some more information. Plant specimens were collected, dried and preserved properly. They were identified through available literature (Nasir and Ali, 1971 to 1995; Ali and Qaisar, 1995 to 2006). These plant specimens were submitted to the Dr. Sultan Ahmad Herbarium, Botany Department Government College University, Lahore, Pakistan.

RESULTS

The following medicinal information was collected regarding the plant resources of the investigated area.

***Abutilon indicum* (Linn.) Sweet (Malvaceae)**

Vernacular name: Kanghi buti.
Common name: Peeli buti.
Occurrence: Common.
Flowering: Throughout the year.
Parts used: All parts.

Leaves extract is given in piles. Leaves are demulcent and used against gonorrhoea, urethrites and bladder inflammation. Root is diuretic and used in stranguary.

Decoction is given in diarrhea and also useful in toothache. Seeds are stimulant.

***Acacia nilotica* (Linn.) Delice (Mimosaceae)**

Vernacular name: Kikkar.
Common name: Babul.
Occurrence: Very common.
Flowering and fruiting: June to January.
Parts used: All parts.

Bark is astringent and used in diarrhea. Gum and immature pods are useful in sexual impotency and leucorrhoea. Bark decoction are recommended in toothache and swollen gums. Powder of ash is used as tooth powder.

***Achyrrathus aspera* Linn. (Amarantaceae)**

Vernacular name: Puthkandda.
Common name: Charchita.
Occurrence: Common.
Flowering and fruiting: September and April.
Parts used: Whole plant.

The paste of leaves is applied on skin diseases and also on insects (snake, scorpion) and mad dog bites for relief. Plant is burnt in a container on fire, and ash with honey is very effective in asthma and productive cough. Paste of root is applied on face freckles. Paste of seeds is given to patient for ejection of kidney and bladder stones. It is also applied on scars of small pox.

***Adhatoda vasica* Nees (Acanthaceae)**

Vernacular names: Bansa.
Common name: Arusa, vasaca.
Occurrence: Common.
Flowering: Throughout the year.
Parts used: Whole plant.

It is antiseptic, febrifuge and expectorant. Decoction of leaves and root is highly recommended in cough, bronchitis, asthma and rheumatism. A salt is obtained from the ash of plant. Its root is ground along with black pepper and given in malaria.

***Adiantum capillus-veneris* Linn. (Polypodiaceae)**

Vernacular names: Persiaoshan.
Common name: Sumbul, hansraj.
Occurrence: Common.
Parts used: Fronds.

The plant is used as demulcent, expectorant, diuretic, tonic and febrifuge. Its decoction is used mostly instead of using powder alone. The steam of its decoction is used to reduce fever. It is ground and burn along with oil and applies to hairs to make hairs strong, black, shiny and long.

***Ageratum houstonianum* Mill. (Astraceae)**

Occurrence: Less common.
Flowering: May to July.
Parts used: Leaves and root.

Juice of root is antilithic. Leaves are styptic, applied in cuts and externally in ague.

***Alhagi maurorum* Medic. (Papilionaceae)**

Vernacular name: Jawansa.
Common name: Khar shutar.
Occurrence: Very common.
Flowering: March to May.
Parts used: Whole plant.

It is diuretic and purifies the blood. Its decoction is suggested for bleeding piles. Its juice is anti-toxic against mercury toxicity. Exudation of leaves and branches known as "Taranjabin" used as aperient, calagogue. Oil from leaves is used in rheumatism. Bath taken from the decoction of this plant is effective against skin eruptions. Whole plant is fodder for camel and leaves for goat.

***Boerhavia diffusa* L. (Nyctaginaceae)**

Vernacular name: Itsit.
Common name: Baskhapra.
Occurrence: Less common.
Flowering: August to December.
Parts used: Whole plant.

Plant is expectorant, diuretic, laxative, stomachic, diaphoretic, emetic, anthelmatic, febrifuge, purgative, used in anemia and jaundice.

***Calotropis gigantea* R. Br. (Asclepiadaceae)**

Vernacular name: Ak desi.
Common name: Ak.
Occurrence: Very common.
Flowering: All the year round.
Parts used: All parts.

The fresh yellow leaves are slightly warm on fire and their

extracted juice is poured in ear for relief in otorrhoea. Its root is ground along with black pepper and ginger, which is said to be eaten in cholera. Salts obtained from this plant are effective in rheumatism, cough and asthma, and along with honey it is appetizing and carminative. Latex is externally applied on ringworm and on insect (snake and scorpion) bites.

Leaves are burnt in oil of aniseed and this oil is used in backache and rheumatism.

The smoke of plant keeps mosquitoes away from house. Young twigs are ground and their poultice is applied externally to relieve pain in inflammation. The silky floss of the seeds (cotton) is used for stuffing pillows.

***Calotropis procera* (Wild.) R. Br. (Asclepiadaceae)**

The characteristics and uses of this plant are very much similar to that mentioned for *Calotropis gigantea*.

***Cannabis sativa* Linn. (Cannabinaceae)**

Vernacular names: Bhang.
Common name: Bhang, charas, ganja.
Occurrence: Common.
Flowering: August to October.
Parts used: Whole plant.

Plant is used as tonic, intoxicant, stomachic, narcotic and sedative.

***Capparis decidua* (Forssk.) Edgew. (Capparidaceae)**

Vernacular name: Daila.
Common name: Karir.
Occurrence: Very common.
Flowering: January to April.
Parts used: All parts.

The coal of the old plant mixed with honey is expectorant and internally used for asthma, cough, and chronic pain in joints. The tender leaves and young twigs are ground and applied on boils, painful sites and inflammation; they also contain rubefacient and vesicant principle, which raise blisters.

Flower buds and unripe fruit are boiled and cooked as vegetable for rheumatism. The unripe fruits are made into pickles and used as natural appetizer, expectorant, vermifuge and also recorded as hepatic stimulants and protectors, improving liver and stomach function and also used in cardiac troubles. The young branches are chewed to relieve toothache. Infusion and decoction from caper root bark have been traditionally used for dropsy, anemia and gout.

***Centella asiatica* (Linn.) Urban (Apiaceae)**

Vernacular name: Brahmi buti.
Common name: Brami.
Occurrence: Less common.
Flowering: March to June.
Parts used: Whole plant.

Plant is blood purifier. It is dried under shade and powdered and then applied on leprosy and other skin diseases. Fresh or dried herb is ground along with black pepper and almonds and then sieved. This tonic is used to improve memory.

***Chrozophora tinctoria* (Linn.) (Euphorbiaceae)**

Vernacular name: Bakkar.
Common name: Subali.
Occurrence: Less common.
Flowering and fruiting: May to July.
Parts used: Whole plant.

Plant is emetic, poisonous and cathartic.

***Citrullus colocynthis* Linn. Schrad. (Cucurbitaceae)**

Vernacular name: Tumma.
Common name: Indrayan, Hunzal.
Occurrence: Less common.
Flowering: November to January.
Parts used: Root and fruit without seeds.

Fruit is resolvent, expectorant, abortifacient and purgative. It is used in small dose for gas trouble, constipation and intestinal disorder. It is used along with other herbs in epilepsy and paralysis. Juice is burnt in coconut oil and used for headache. Root is used as Miswak (toothbrush).

***Convolvulus arvensis* Linn. (Convolvulaceae)**

Vernacular name: Leli.
Common name: Hiran khari.
Occurrence: Very common.
Flowering: December to January.
Parts used: Whole plant.

Plant is laxative. The powder of the plant is given in chronic constipation and in diabetes. Plant paste is applied on rat bite and inflammation. Its decoction is expectorant and used in cough, flu, and in jaundice. It is very good blood purifier, so plant is ground along with black pepper and eaten in leprosy and in other skin diseases and also in piles and diarrhea. The smoke of

the plant purifies the air. It is favorite fodder of cattle and it is specially given to buffaloes as this plant improves the milk production.

***Corchorus depressus* (Linn.) Stocks (Tiliaceae)**

Vernacular name: Bahu phalli.
Common name: Bhonphali.
Occurrence: Very rare.
Flowering: July to November.
Parts used: Seeds and leaves.

Plant is used as cooling agent. It is very useful in sexual impotency and leucorrhoea. Plant is ground in water and applied on wounds.

***Croton tiglium* Linn. (Euphorbiaceae)**

Vernacular names: Jamal ghoti.
Common name: Jamal ghoti.
Occurrence: Very common
Parts used: Whole plant.

It is extremely purgative and vesicant. The seeds are the source of croton oil used as a purgative.

***Cuscuta reflexa* Roxb. (Cuscutaceae)**

Vernacular name: Amarbail.
Common name: Akash-bel.
Occurrence: Rare.
Flowering: January to February.
Parts used: Whole plant.

Plant is resolvent, demulcent, expectorant, vermifuge and blood purifier and used in gonorrhoea. Steam of its decoction gives relief from pain. Juice is used in jaundice. Plant is crushed and cooked in oil and applied on abscess.

***Datura stramonium* Linn. (Solanaceae)**

Vernacular name: Dhatoora.
Common name: Dhatoora, Joz-e-masal.
Occurrence: Common.
Flowering: March to June.
Parts used: Seeds and leaves.

It is used externally as demulcent. Plant is burnt in oil, which is used in headache. Leaves are dipped in oil and slightly warmed over fire and bound on abscess and pimples. Smoke of leaves is used in asthma. Leaves and seeds are narcotic and antiseptic. Juice of fruit is applied

to cure dandruff.

***Digera muricata* (Linn.) Mart (Amaranthaceae)**

Vernacular names: Tartara.
Common name: Tartara.
Occurrence: Common.
Flowering: August to December.
Parts used: Whole plant.

The plant is laxative in large doses; flowers and seeds are recommended in urinary disorder.

***Echinops echinatus* Roxb. (Astraceae)**

Vernacular name: Uont-katara.
Common name: Astrakhar.
Occurrence: Common.
Flowering: October to January.
Part used: All parts.

Plant is appetizing, carminative, diuretic and used in liver diseases and sexual impotency. Powder of root bark is used along with honey for asthma and cough. Juice of flowers is poured in eyes.

***Eclipta prostata* Linn. (Astraceae)**

Vernacular name: Bhangra.
Common name: Bhaingra.
Occurrence: Very common.
Flowering: May to October.
Part used: Whole plant.

Juice of plant is used in oral disease, toothache, jaundice, spleen enlargement and also used in flu. Leaves are chewed for betterment of voice. Leaves are rubbed on anus as a vermifuge. Juice of leaves is applied on athlete's foot disease and other skin diseases. Juice of leaves is added into eyes to improve eyesight. Juice is burnt in oil of aniseed and this oil gives black color to hair.

***Embelia robusta* Roxb. (Myrsinaceae)**

Vernacular names: Baobreng.
Occurrence: Common.
Flowering: July to September.
Parts used: Fruit and root bark.

It is expectorant and vermifuge. Dried bark is used against toothache. Its powder along with curd is used to kill the tapeworms.

***Euphorbia helioscopia* Linn. (Euphorbiaceae)**

Vernacular name: Chatriwal.
Common name: Dodhi Kalan.
Occurrence: Less common.
Flowering: February to March.
Part used: Whole plant especially latex.

Latex is applied on ringworm, eczema, abscesses and other skin diseases. Plant is used in respiratory diseases.

***Euphorbia prostrata* Ait. (Euphorbiaceae)**

Vernacular name: Hazardani.
Common name: Dodhi Khurd.
Occurrence: Very common.
Flowering: April to August.
Part used: Whole plant.

Plant serves as fodder of cattle. Fresh plant is ground along with black pepper and used for bleeding piles. Plant is dried under shade and powdered and is used in leucorrhoea and gonorrhoea.

Herb is ground along with water and recommended in dysentery.

***Fagonia cretica* Linn. (Zygophyllaceae)**

Vernacular name: Dhamasa.
Common name: Damaso.
Occurrence: Common.
Flowering: October to January.
Part used: Leaves, stem and juice.

Plant is dried under shade ground into powder form, which is used in gynae problems.

The plant is demulcent, febrifuge, alterative and blood purifier. The paste of the plant is externally applied on tumors.

***Foeniculum vulgare* (Linn.) Mill. (Umbelliferae)**

Vernacular name: Saunf.
Common name: Saunf.
Occurrence: Cultivated.
Flowering: March to April.
Part used: Fruit.

Fruit is alterative, lactagogue, emmenagogue, diuretic, aromatic and carminative. Dried fruit or its powder is very effective in gas trouble. Its decoction in winter and juice in summer is recommended for dysentery. Two or three drops of its juice is said to pour in eyes for improvement of eye sight.

***Haloxylon recurvum* Bunge ex Boiss. (Chenopodiaceae)**

Vernacular name: Lana.
Common name: Ushnan.
Occurrence: Less common.
Flowering: November to December.
Part used: Whole plant.

The plant is abortifacient, diuretic, emmenagogue and resolvent. Local people burn the plant in a pit to get carbonates of soda that is used as an alternate of soap for cloth washing.

***Heliotropium europaeum* Linn. (Boraginaceae)**

Vernacular name: Hathi sundi.
Common name: Feel khurtomi.
Occurrence: Very common.
Flowering: November to January.
Part used: Whole plant.

Plant is used as antiperiodic and powder of leaves is used in malaria. Leaves are rubbed on swollen gums. Paste of leaves is applied on poisonous wounds and insect and mad dog bite. Salts are obtained from ash of plant, which are used for cough.

***Heliotropium strigosum* Willd. (Boraginaceae)**

Vernacular name: Gorakh pan.
Common name: Pana choni, Tindu.
Occurrence: Rare.
Flowering: April to July.
Part used: Whole plant.

Plant is blood purifier. It is ground along with water and said to be eaten empty stomach at morning for liver and stomach complaints, pimples and other skin diseases.

***Indigofera gerardiana* Wall. (Papilionaceae)**

Vernacular names: Neel.
Common name: Neel.
Occurrence: Common.
Parts used: Whole plant, usually leaves.

It is astringent and prevents pregnancy. The plant is used locally for family planning in cases where the mother's health does not support the pregnancy otherwise the locals like to produce more children.

***Lactuca serriola* Linn. (Asteraceae)**

Vernacular name: Berham dandi.

Common name: Berm dandi.
Occurrence: Less common.
Flowering: July to September.
Part used: Whole plant.

Plant is febrifuge and best blood purifier. Fresh plant is ground in water along with black pepper that is used to improve memory and for all types of skin diseases. Plant is dried under shade and ground into powdered form, which is used in malaria and fever.

***Launaea procumbens* (Roxb.) Ram. and Raj. (Asteraceae)**

Vernacular name: Dudhbhattal.
Common name: Dudglak.
Occurrence: Common.
Flowering: October to December.
Part used: Whole plant.

The plant is crushed in water and given in painful urination and gonorrhoea. It is a good fodder for cattle.

***Lawsonia inermis* Linn. (Lythraceae)**

Vernacular name: Medi.
Common name: Mehndi, Henna.
Occurrence: Cultivated.
Flowering: June.
Part used: All parts.

Plant is diuretic, blood purifier, demulcent and resolvent. Its decoction is effective in jaundice and skin diseases. Paste of its leaves applied over hands and feet in irritation. It gives colour therefore, also used as hair dye.

***Linum usitatissimum* Linn. (Linaceae)**

Vernacular names: Alsi.
Occurrence: Less common.
Flowering: February to April.
Parts used: Seed, bark, leaves, flower and Oil.

It is resolvent, demulcent and expectorant. Powder of the bark is applied over wounds to stop bleeding. Its decoction is used in cough, asthma, gonorrhoea and ulcers of bladder and uterus. Its poultice is applied over abscess and pimples.

***Malva parviflora* Linn. (Malvaceae)**

Vernacular name: Khubazi.
Common name: Panirak.

Occurrence: Less common.
 Flowering and fruiting: January to March.
 Part used: Whole plant.

Its decoction along with sugar is used in dry cough. Seed is demulcent; used in cough and ulcers in bladder.

***Melia azedarach* Linn. (Meliaceae)**

Vernacular name: Dhrek.
 Common name: Bakain.
 Occurrence: Common.
 Flowering: Flowers at various seasons.
 Part used: Seeds and leaves.

Plant is resolvent, febrifuge, demulcent and blood purifier. Bark is vermifuge. Leaves are boiled in water and used to wash hair. Leaves are ground in water along with black pepper and used in all types of skin diseases. Small dose of powder of seeds is recommended for all types of piles.

***Otostegia limbata* (Benth.) Boiss. (Labiatae)**

Vernacular names: Bui.
 Common name: Bui.
 Occurrence: Very common.
 Flowering: May to June.
 Parts used: Leaves.

Juice of leaves is applied to children's gum and to ophthalmia in man and beast.

***Oxalis corniculata* Linn. (Oxalidaceae)**

Vernacular name: Khtkal.
 Common name: Khatti buti, Tapti.
 Occurrence: Common.
 Flowering: March to December.
 Part used: Whole plant.

Leaves are antiscorbic, refrigerant, cooling and stomachic. Plant is used as vegetable and cooked along with other herbs, which is used in liver and stomach complaints. Plant is diuretic and juice is very effective in jaundice.

***Papaver hybridum* Linn. (Papaveraceae)**

Vernacular names: Post.
 Occurrence: Less common.
 Flowering: February to April.
 Parts used: Petals.

The petals are diaphoretic. Fruit and its decoction are

sedative and demulcent. The decoction of stem is used in relief of pain in eyes and ear. Decoction along with salt is used in flu and cough. The powder of fruit causes constipation, therefore, used in diarrhea.

***Peganum harmala* Linn. (Zygophyllaceae)**

Vernacular names: Harmal.
 Common name: Aspand.
 Occurrence: Very common.
 Flowering: October to December.
 Parts used: Leaves, seed and root.

It is demulcent, diuretic and used in sexual impotency. The seeds are antiperiodic and are used in rheumatism. It is blood purifier, ammanagogue, emetic and alterative. Its seeds along with seeds of *Linum usitatissimum* are ground and given in asthma along with honey. It is mostly used for sexual impotency. Seeds are boiled in olive oil and used for deafness. It keeps warm brain and other body parts.

***Phyla nodiflora* (Linn.) Green (Verbenaceae)**

Vernacular names: Bukkan.
 Common name: Bukkam.
 Occurrence: Very common.
 Flowering: September to November.
 Parts used: Whole plant (usually leaves).

It is expectorant and diuretic. Its decoction is used in fever. Its paste is also very effective for the eczema of head of children. It is also good for wounds and swellings, high blood pressure and spleen diseases. This is best herb for bleeding piles. Herb is ground along with black pepper, and then filtered. Filtrate is taken along with sugar in piles, gonorrhoea and inflammation of bladder.

***Polygonum plebejum* R. Br. (Polygonaceae)**

Vernacular names: Ghumka.
 Common name: Raniphal.
 Occurrence: Common.
 Flowering: February to April.
 Parts used: Whole plant.

Dried and powdered plant is taken internally in pneumonia. Root is used in bowel complaints. It is astringent and blood purifier. This herb heals the wounds.

***Portulaca oleracea* Linn. (Portulacaceae)**

Vernacular names: Lunak.

Common name: Khurfa, Kulfе-ka-sag.
 Occurrence: Very common.
 Flowering: July to October.
 Parts used: Whole plant.

The plant is alterative and refrigerant; used as vegetable in diseases of liver, kidney and lungs. Paste of the leaves is externally applied to burns, scald and other skin diseases. Seed is demulcent, astringent, diuretic and vermifuge. Juice of stem is applied against prickly heat.

***Prosopis cineraria* (Linn.) Druce (Mimosaceae)**

Vernacular names: Jhand.
 Occurrence: Common.
 Flowering: May to August.
 Parts used: Bark, flower and fruit.

Flowers pounded and mixed with sugar are eaten by women in pregnancy to avoid miscarriage. Pods are astringents. Bark is used in rheumatism and scorpion-sting. Ashes are rubbed over the skin to remove hairs. It is food for livestock and fuel for locals. Its wood is used in making huts. Unripe pods are used as vegetable.

***Ranunculus muricatus* Linn. (Ranunculaceae)**

Vernacular name: Jal dhania.
 Common name: Latokari, Kor gandal.
 Occurrence: Less common.
 Flowering: February to April.
 Part used: Whole plant.

This herb is very effective in plague. Plant is vesicant and rubefacient. When crushed plant is applied on skin it raises blisters. Fresh plant is ground and applied on abscess and tumors of plague.

***Ricinus communis* Linn. (Euphorbiaceae)**

Vernacular name: Arind.
 Common name: Arund.
 Occurrence: Common.
 Flowering: Flowers at various seasons.
 Part used: Seeds, seed oil and leaves.

Leaves are dipped in oil of aniseed and bound on swelling and joints for relief from pain. Castor oil is purgative, expectorant and used in constipation. Seeds are counter irritant; used in scorpion sting and fish poison. Endosperm of seed prevents the pregnancy.

***Rosa damascena* Mill. (Rosaceae)**

Vernacular names: Gulab.

Common name: Gulab.
 Occurrence: Cultivated.
 Flowering: April to June.
 Parts used: Petals and buds.

Buds are considered astringent, tonic, cephalic, cardiac, aperients and reputed for removing bile and cold humors. Petals are applied externally as astringent. In the form of past with equal amount of sugar, it is taken as tonic and fattening. This paste is locally called as "Gulqand" and is delicious. Extract of petals, "Arq-e-Gulab" (rose water) is purgative and used for stomach ailments of newborn babies. Its smell is best for brain but in weak persons it initiates flue. It is also sprinkled on the funeral on the way to graveyard.

***Salvadora oleoides* Dence. (Salvadoraceae)**

Vernacular name: Peeloo.
 Common name: Pilu, Wan, Jal.
 Occurrence: Less common.
 Flowering: December to February.
 Part used: Seeds, seed oil bark, fruit and root.

Its wood is use as fuel, tree trunk is used as pillar in huts, and branches and leaves serve as camel fodder. Ripen fruit is eaten by locals and seeds yield oil which is used in toothpaste. Twigs and roots are used as toothbrush. Fruit is resolvent, expectorant, diuretic and opens the pores of body. Decoction of bark is febrifuge.

***Sisymbrium irio* Linn. (Cruciferae)**

Vernacular name: Khaksi.
 Common name: Khub Kalan.
 Occurrence: Rare.
 Flowering: February to April.
 Part used: Seeds.

Plant is febrifuge and used in chronic cough, decoction is used in fever. Seeds are sprinkled over bed of a patient suffered from small pox or measles.

***Solanum miniatum* Beruh. ex Willd. (Solanaceae)**

Vernacular names: Peelak.
 Common name: Mako.
 Occurrence: Very common.
 Flowering: All the year round.
 Parts used: Whole plant.

It is resolvent, diuretic, demulcent, tonic, hydragogue and sedative. Juice of its leaves is given in small pox and other skin diseases. Its leaves are chewed for boils in

mouth. Decoction is used to wash wounds, boils and also used to wash eyes to improve eyesight. Infusion of both fresh and dry plants is effective for wounds of stomach, spleen, intestine, liver and uterus. Decoction is mixed with sugar and used as sedative.

***Solanum surratensis* Burm. F. (Solanaceae)**

Vernacular names: Choti kandiari, Mahokri.
Common name: Katai khurd.
Occurrence: Very common.
Flowering: June to November.
Parts used: Whole plant.

Plant is digestive, alterative, diuretic, expectorant and vermifuge. It is used in cough, asthma, fever, and chest pain. Flowers are dried in shade and ground; the powder along with honey is given in all types of coughs. Plant is used in gonorrhoea and decoction is effective in toothache. Juice of berry is useful in sore throat and leaves are applied locally in relief pain. Pulp of fruit is rubbed on joints for relief of pain.

***Sonchus asper* (Linn.) Hill. (Astraceae)**

Vernacular names: Dodhak bastani.
Occurrence: Very common.
Flowering: December to April.
Parts used: Whole plant.

Pounded herb is applied to wound or boils.

***Sueda fruticosa* Forsk. (Chenopodiaceae)**

Vernacular names: Lani.
Common name: Khar.
Occurrence: Common.
Flowering: April to October.
Parts used: Leaves.

The infusion of leaves is used as an emetic. Poultice made from leaves is applied in ophthalmia for relief. The plant is used as fodder for camel. Salts obtained from this are used in medicine for ejection of stones in bladder and kidney.

***Swertia chirata* Buch. Ham. (Gentianaceae)**

Vernacular names: Chiretta.
Occurrence: Common.
Flowering: September to November.
Parts used: Whole plant.

Plant is resolvent, alterative and febrifuge. It is blood

purifier therefore used in eczema, leprosy and other skin diseases. It is used in diarrhoea.

***Tamarix aphylla* (Linn.) Karst. (Tamaricaceae)**

Vernacular name: Ukan.
Common name: Farash.
Occurrence: Rare.
Flowering: August to March.
Part used: Gall and Bark.

The bark is used for tanning purposes. Its leaves are good fodder for camels while local people use its wood for fuel as well as for agricultural implements. Poultice of leaves is applied over wounds of cattle. Gargles from decoction of leaves are recommended in toothache. Powder of dried leaves is sprinkled over wounds. Powder of bark along with mustard oil is applied over burning.

***Tephrosea purpurea* (Linn.) Pers. (Papilionaceae)**

Vernacular names: Sarphonka.
Occurrence: Less common.
Flowering: August to October.
Parts used: Whole plant.

It is diuretic, blood purifier, laxative and used in leprosy. Leaves are used to avoid miscarriage. Its petals are ground along with petals of *Cannabis sativa* and said to be eaten in bleeding piles. Root is bitter; used in chronic diarrhea and as fish poison.

***Terminalia belerica* Roxb. (Combritaceae)**

Vernacular names: Bahera.
Occurrence: Less common.
Flowering: April to June.
Parts used: Fruit and kernel.

Plant is alterative, appetizing, used in diarrhea and piles. It is also used in asthma and cough. Kernel is narcotic. Fruit is tonic and bitter. It improves eyesight and is very good for brain. When fruit is half ripe it is purgative and when fully ripe it is astringent.

***Tinospora cordifolia* Miers ex Hook. f (Menispermaceae)**

Vernacular names: Gilo.
Occurrence: Common.
Flowering: June to September.
Parts used: Root, stem and juice of plant.

It is alterative, febrifuge, astringent and diuretic. It is

always used in fresh form and its pieces soaked overnight and said to be eaten in old fever. Extract of fresh plant is very useful. Starch from root and stem is nutrient and is used in chronic dysentery and diarrhea.

***Trianthema govindia* Ham. (Aizoaceae)**

Vernacular names: Mechachi buti.
Common name: Buskhapra.
Occurrence: Common.
Flowering: October to December.
Parts used: Whole plant and mostly root.

It is febrifuge, diuretic resolvent, expectorant and emmanogogue. Fresh juice is used in jaundice and in exploration and as diuretic. Root is used in cough, asthma, and flue and in fever of children. Seeds are used in sexual impotency. Plant is abortifacient and as a remedy for pain in bladder and for snakebite.

***Tribulus longipetalus* Viv. (Zygophyllaceae)**

Vernacular names: Bhakra.
Common name: Gokhru kalan.
Occurrence: Common.
Flowering: October to December.
Parts used: Fruit.

Fruit is used in urinary disorder, impotence, cough and heart diseases.

***Tribulus terrestris* Linn. (Zygophyllaceae)**

Vernacular names: Chota Gokhru.
Occurrence: Common.
Flowering: August to November.
Parts used: Whole plant.

The plant is cooling, diuretic, demulcent, tonic and aphrodisiac. Fruit is used in urinary disorder, impotence, cough and heart diseases. Seeds are recommended in diseases of bladder, kidney stone and gout.

***Trichosanthes cucumerinus* Linn. (Cucurbitaceae)**

Vernacular names: Chichinda.
Occurrence: Less common.
Flowering: February to April.
Parts used: Seeds and fruits.

Seeds are cooling. Fruit is considered anthelminitic, purgative and emetic.

***Trachyspermum ammi* (Linn.) Sprague (Umbelliferae)**

Vernacular names: Ajwaind.
Common name: Ajwain.
Occurrence: Cultivated.
Flowering: March to April.
Parts used: Fruit and root.

Root is carminative and diuretic. Fruit is stimulant, carminative, tonic, antiseptic, stomachic; used in colic, indigestion, diarrhea, and cholera. It is used along with lemon juice in sexual impotency and given in old fever.

***Withania somnifera* Dunal (Solanaceae)**

Vernacular name: Asgand.
Common name: Aksan.
Occurrence: Very common.
Flowering: All year round.
Part used: Root and leaves.

Leaves are burnt in mustard oil and crushed to make a poultice that is applied on eczema. A poultice made up of leaves is also locally applied over breast to keep it shape. The powder of root is given with milk or butter in leucorrhoea, spermatorrhoea, rheumatism and also used for pregnancy.

***Zizyphus mauritiana* Lamk. (Rhamnaceae)**

Vernacular names: Beri.
Occurrence: Very common.
Flowering: March to June.
Parts used: Leaves, fruit, root and bark.

Its wood is used as timber and fruits are edible. It is also food for cattle. Wood is considered best for small implements. Decoction is used to wash hair.

***Zizyphus nummularia* (Burm. f) Whight and Arn. (Rhamnaceae)**

Vernacular names: Kokan-ber.
Occurrence: Common.
Flowering: March to June.
Parts used: Leaves and fruit.

The dried fruit is soaked in water with *Ficus carica* and this infusion is given for relief in jaundice. Leaves used as fodder for cattle.

***Zygophyllum simplex* Linn (Zygophyllaceae)**

Vernacular names: Alethi.

Common name: Alethi.
 Occurrence: Very common.
 Flowering: November to January.
 Parts used: Leaves and seeds.

Seeds are anthelmintic. Seeds and leaves are applied to eyes in the form of infusion in eye diseases like leucoma and ophthalmic. It is reported as fodder for camel.

DISCUSSION

Traditional ethnobotanical knowledge helps ecologists, pharmacognosists, taxonomists, and wildlife managers to improve the socioeconomic aspect of an area. It characterizes traditional knowledge to establish priorities with the local communities and to ensure that local values are translated into the rational use of resources and into effective conservation of biological diversity and cultural knowledge (Ibrar et al., 2007). According to the World Health Organization (WHO), as much as 80% of the world's population depends on traditional medicine for their primary healthcare needs. There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal plants for the treatment of various diseases (Azaizah et al., 2003). Due to lack of communication, poverty, ignorance and lack of modern health facilities, most people especially rural people are still forced to practice traditional medicines for their common day ailments. Most of these people form the poorest link in the trade of medicinal plants (Khan, 2002).

The area is under heavy biotic pressure. Overgrazing, human population explosion, uprooting of medicinal plants by the local people, and other casual factors are responsible for habitat loss, soil erosion and proper functioning of ecosystems. There is dire need to conserve the biodiversity of the area in order to provide the resources and resource alternatives for our own survival in future. Similarly, habitat deterioration has also lead to the reduction in regeneration of many plants. For proper restoration of vegetation for sustainable use ecological efforts are needed with the participation of local community. One of the objectives of this study is to record the traditional knowledge about plants. It was observed in the present study that some elders of the community are well known healers having good relationship with patients; and this would improve the quality of healthcare delivery. Due to lack of interest among the younger generation as well as their tendency to migrate to cities for lucrative jobs, there is a possibility of losing this wealth of knowledge in the near future. It thus becomes necessary to acquire and preserve this traditional system of medicine by proper documentation and identification of specimens.

Plants constitute the hub of daily living in the community under study. They provide ready-made food,

medicines to fight diseases, services as fodder and forage for cattle, fuel wood, and materials for making furniture and tools, timber for construction and many more useful items (Iqbal and Hamayun, 2006). The total documented 69 species from the study area have been classified into 41 families. Most of them growing in wild. Among them *Acacia nilotica*, *Sueda fruticosa*, *Calotropis procera*, *Withania somnifera*, *Cannabis sativa*, *Capparis decidua*, *Alhagi maurorum*, and *Peganum harmala* are dominant species used as medicinal. Some medicinal plants are also cultivated in the present study area. In which *Rosa damascena*, *Trachyspermum ammi* and *Portulaca oleracea* are most commonly cultivated medicinal plants. *R. damascena* is used as astringent and tonic is cultivated for rose water and gulqand (Shinwari et al., 2002). Our findings agree with him. The investigation revealed that, the traditional healers used the plant wealth to treat various diseases. The documented medicinal plants were mostly used to cure skin diseases, poison bites, stomachache and nervous disorders. Moreover a single plant is used for more than one disease. Herbal medicine even today plays an important role in rural areas and various locally produce drugs are still being used as household remedies for various diseases especially in these areas for different ailments (Qureshi and Ghufuran, 2005). Since the uses are based on empirical knowledge, the scientific study of all these herbal drugs is highly desirable to establish their efficacy for safe use.

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