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Study of ethnomedicinal plants of head Khanki, Pakistan

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ABSTRACT

Introduction: Ethnomedicinal study is the useful relationship between human and vegetation in their environment for medicinal uses. Medicinal plants play a significant role in healthcare system and local traditional uses both for human and animals.

Materials and Methods: Field survey and interviews method are used for the analysis of field data. The traditional knowledge of medicinal plants uses was collected through personal interviews and questionnaires during field research. An ethnomedicinal survey was also conducted for collecting information about medicinal uses of different weeds in various parts of Head Khanki.

Results: A total of 63 species of plants (angiosperm) having 24 families and also ethnomedicinal uses are noted. Medicinal plants are enlisted according to their common name, botanical name, different uses and life form.

Conclusion: During the research noted that high richness and abundance of medicinal plants play a vital role for the health care the communities. This research is conducted to improve knowledge regarding medicinal plants and protect medicinal plants from extinction.

Key words: Ethnomedicinal uses, Khanki, Herbal, Medicinal, Pakistan.

INTRODUCTION

Ethnomedicinal studies are significant for the discovery of modern drugs from indigenous medicinal plants. There are a suitable source of information regarding useful medicinal plants that can be targeted for management and domestication (Njoroge *et al.*, 2004; Mahmood *et al.*, 2013). Documentation of traditional medicinal knowledge of indigenous plant species has contributed a number of vital drugs (Cox, 2000; Gilani and Atta-ur-Rahman, 2005). At present, 25% drugs of herbal remedies included in the modern pharmacopeia are plant derived and many others are synthetic drugs built on prototype substances isolated from plants (WHO, 2002). Several literature reports have highlighted the fundamental role of natural products in the development of new drugs (Colvard *et al.*, 2006; Verpoorte *et al.*, 2006; Cordell and Colvard, 2012). Restoration the values of medicinal plants in traditional health practice all over the world has diverted the attention of scientists towards the ethnomedicine and the use of herbal remedies in current scenario.

More than 80% people depend on traditional medicines to fulfill daily needs for healthcare (Akerele, 1993). Folk medicines are easy and simple way to obtain and are less harmful. In the local community area, native people are used around 90% of the medicinal plant species that occur (Baqar, 1989). Indigenous and traditional ethnomedical information about plants, both codified and oral, is certainly eroding (Mujtaba and Khan, 2007). Pakistan is blessed country with a wide range richness and abundance of wild plants which are being used for herbal purposes (Ahmad *et al*., 2004).

Record of traditional knowledge regarding herbal remedies is now seen as a significant feature of conservation strategy. This study, therefore, planned to know the medicinal awareness of indigenous plants of native communities from Gujranwala district, by developing the

comprehensive catalogue of medicinal plant species. This work, being the first collation and listing of all available data on medicinal plants in this area, provided a first assessment of these species, their traits and therapeutic uses.

MATERIALS AND METHODS

The present survey was carried out at Head Khanki, Punjab, Pakistan from April 2010 to September 2010, when the wetland vegetation was to a larger extent at full flowering and vigorous growth. Head Khanki is situated at the River Chenab and distance about 35km from Gujranwala district; 90km from Lahore district; and near to Gujrat. This area consists of 2816 hectare, situated at 32^{o}23'55 N, 73^{o}57'59 E and Elevation is 218. Head Khanki is a tropical forest (Siddiqui, 1997), having wetland area (IUCN, 1989; Scott, 1989) and rich in biodiversity. It is an agro-forest land and pH of water at Head Khanki was about 7 to 8. The climate of the area divided into four seasons and summers (upto 45^{o}C), autumn, winter (upto 5^{o}C) and spring. There are two method are used for the analysis of the field data i.e. field survey and Interviews and Questionnaires.

Field Survey: For the collection of data, area was visited several times during year 2010 and collected plant specimens from various localities of the area. In this survey, the area of Head Khanki is mainly focused and conducts information from local community (peoples, farmers and Hakims etc.).

Interviews and Questionnaires: Information of medicinal uses of plants was obtained through interviews and questionnaires. Interviews were recorded from local community (farmers, Hakims, and peoples etc.) and conducted data from information. Data was obtained by filling out questionnaires forms which have the information of local name, plants part used and medicinal uses of plants. They were compared with "The Flora of Pakistan" (Ali and Qaiser, 2007).

Preservation of plant: Plant specimens were recorded from head Khanki and preserved into herbarium, for reference. Plant specimens were collected, dried and pressed to mount of herbarium sheet and preserved in the Herbarium of University of Gujrat, Pakistan.

RESULTS AND DISCUSSION

The present field study shows the ethnomedicinal uses of plants and the related knowledge preserved by the local community in Head Khanki area. During the field survey, total 63 species having 24 families were enumerated and the data regarding their botanical name, family, local name, English name, part used and medicinal uses were arranged in Table 1. There were 27 herbs, 11shurbs, 11grasses and 14 trees enumerated on the basis of medicinal uses and importance. It was observed that all plant have very important role in their daily life and local community indicate that these species are mostly used in asthma, fever, cough, stomach abdominal disorders, jaundice, joints pain, joints pain rheumatism and jaundice. More than eighty percent of the whole population depends on traditional medicine for the fundamental needs of health care (Akerele, 1993).

In ancient times, peoples and local community had traditional knowledge of medicinal plants. In healthcare system, several hundred plants have been used as herbal and folk medicine (Hussain *et al.,* 2008). Due to the ignorance, poverty and lack of modern health facilities, most people are still depend on the tradition medicine for their treatment (Azaizeh *et al.,* 2003).

Conclusion: The current study exposed that a number of medicinal plants are practiced by indigenous people of study area in their healthcare system. The indigenous community still relies on traditional medicine although, the modern health-care services are present in the study area; thus, the medicinal plants remain important remedies for solving health problems.

Table 1: Diversity and ethnomedicinal uses of plants of Study area.

Sr.	Botanical name	Family	English name	Local name	Part used	Ethnomedicinal uses
				HERBS		
1	*Achyranthes aspera L.*	Amaranthaceae	Prickly chaff flower	Puth kanda	Whole plant	Used in pneumonia, asthma and cough and also used as astringent, diuretic and to reduce appetite.
2	*Ageratum conyzoides* L.	Asteraceae	Goat weed	Mukhra,	Leaves	Used as styptic and antifungal.
3	*Amaranthus spinosus L.*	Amaranthaceae	Spiny pigweed	Azgho-chalwere	Whole plant	Medicinally used for colic, snakebites, piles and as expectorant and diuretic. The root is used to treat Gastrointestinal disorders, rheumatism and gonorrhea.
4	*Amaranthus viridis L.*	Amaranthaceae	Slender amaranth	Ganhar	Whole plant	It is laxative and potherb used in snakebites and scorpion sting, Joint pain, flue, fever, inflammation, dysentery and painful urination leaves and also used as emollient and anthelmintic.
5	*Boerhavia diffusa L.*	Nyctaginaceae	Horse-purslane	Itsit	Whole plant	Used in Kidney stone, swelling, asthma, obesity and snake bite. Plant is also used to cure stomach pain, jaundice, gastric and liver disorder and to regulate menstrual flow.
6	*Chenopodium album L.*	Chenopodicaeae	Lamb's quarter	Bathu	Whole plant	Plant has diuretic, laxative properties and used as a pot herb (saag). Seeds are used for facial paralysis, rheumatic pain and intestinal worm killer and also used in hepatic disorder, enlarged spleen, blood purifier, ulcers, swellings and seminal weakness.
7	*Chenopodium ambrosioides L.*	Chenopodicaeae	Sweet pigweed	Chandan bathwa	Whole plant	Plant is used to relieve backache, joints pain, inflammation and treatment of round worms and also used in medicine for the dropsy, abdomen and cough, has carminative, anthelmintic and pot herb properties.
8	*Chenopodium murale L.*	Chenopodicaeae	Australian-spinach	Karund	Whole plant	Used in vegetable for digestive problems, Plant has anthelmintic, diuretic, laxative, emollient and purgative, treat dyspepsia and liver problems.
9	*Chrozophora tinctoria (L.)A.Juss.*	Euphorbiaceae	Giradol	Neel Kanti	Whole plant	Used in blood purification and jaundice and improve wound healing. Seeds and leaves are taken as a laxative.
10	*Cirsium arvense* (L.) Scop.	Asteraceae	Creeping thistle	Kandaal, Leh	Shoot	To treat heals wounds and used in soup and bread ingredient.
11	*Convolvulus arvensis L.*	Convolvulaceae	Deer's foot	Lehli, Vahri	Leaves, Flowers and Root	Used for Inflammations and stomach disorder, skin diseases, abdominal pain and worms, also used as purgative, antidandruff and detergent.
12	*Conyza ambigua DC.*	Asteraceae	hairy fleabane	Gider buti	Whole plant	Used against dysentery, diarrhea and soreness of throat and also has diuretic and astringent properties.

13	*Coronopus didymus (L.) Sm.*	Brassicaceae	Swine-cress	Jangli haloon	Whole plant	Used for blood prefabrication and flatulence and also used as cooling, refrigerant and fumigants for insect repellent.
14	*Cypreus rotundus L.*	Cyperaceae	Nut grass	Daila	Tubers	Plant is used to treat fever, diarrhea cholera dysentery and blood disorders.
15	*Eclipta alba Hassk*	Asteraceae	Trailing eclipta plant	Sofed Banghara	Whole plant	Used to treat allergy, athlete's foot, ringworm and injury (Burn, cut and ulcer), jaundice, fever, toothache, eye, skin and hair diseases.
16	*Euphorbia heliscopia L.*	Euphorbiaceae	Sun euphorbia	Chhatri Dodak	Whole plant	Used in constipations, cholera, atopic dermatitis and intestinal worm killer.
17	*Euphorbia pilulifera L.*	Euphorbiaceae	Asthma weed	Doddak	Leaf and extract	Used in cough bronchitis, asthma, piles, nausea, vomiting, inflammation and external and also cure measles, athlete's foot disease and wounds.
18	*Euphorbia prostrata L.*	Euphorbiaceae	Creeping spurge	Doodi Buti	Whole plant	Used in liver ailments, chronic fevers, abdominal diseases, as nerve tonic, joint pains, blood purifier, skin diseases, ringworm, allergies, has anti-inflammatory, antibacterial activity and purgative properties.
19	*Malva parviflora L.*	Malvaceae	Cheese weed	Sonchal	Leaves, Seed	Treat to bladder diseases, skin allergy, cure flue, headache, cough, sweating and fever.
20	*Oxalis corniculata L.*	Geraniaceae	Clover sorrel	Khatti Buti	Flowers, Leaves	Used as anthelmintic, stomachic, refrigerant, antispasmodic, anti-septic and treat to fever and acute headache, used in snake bite, skin diseases, wounds bleeding, eyes infection and teeth sensitivity.
21	*Polygonum plebejum R. Br.*	Polygonaceae	Small Knotweed	Hind rani	Shoot, Root	Plant is used as astringent, antileucorrhoeic, antidiarrhoeal, antiseptic, antiperiodic and also used for gleet, throat soreness, liver, spongy gums, haemoptysis and ulcers.
22	*Ranunculus sceleratus L.*	Ranunculaceae	Blister buttercup	Gul-e-ashrafi	Whole plant	Treat to skin diseases, asthma, pneumonia and boils and used as antispasmodic, diaphoretic, skin diseases and antirheumatic.
23	*Rumex dentatus L*	Polygonaceae	Toothed dock	Jangli palak	Leaf and Root	Used as diuretic, astringent, aphrodisiac and demulcent.
24	*Sisymbrium irio L.*	Brassicaceae	London rocket	Khoob Kalan	Seed	Used for cough, fever, asthma and chest congestion, stabbing pain, clearing facial pimples, sunburning erysimoides, dropsy and also used as refrigerant and for abdominal pain of children.
25	*Solanum nigrum L.*	Solanaceae	Night shade	Mako	Leaf, Fruits, Seeds and Roots	Plant is used to treat abnormal and painful secretions from ears and cure dysentery, fever, liver, and skin and eye diseases.
26	*Sonchus asper Hill.*	Asteraceae	Spiny leaved	Asgandh, Dodak	Whole plant	Used as blood purifier, swellings, Tonic, diuretic, emollient and to cure jaundice and constipation and chronic fevers.
27	*Tribulus terrestris L.*	Zygophyllaceae	Puncture vine	Gukhroo	Fruits, Seed	Plant is used in back pain, gonorrhea, urinogenital diseases, liver, kidney and heart disease.

			SHRUBS			
28	*Calotropis procera Br.*	Asclepiadaceae	Milk weed	Akh	Leaves, flowers	Used to treat asthma, Stomach ulcer, fever, cough and skin diseases.
29	*Datura alba Nees*	Solanaceae	Thorn apple	Datura	Leaves, Seeds	Used as relax bronchial muscles, intoxicate, emetic and digestive and seeds used to treat Gonorrhea.
30	*Lantana camara L.*	Verbenaceae	Lantana	Lantana	Whole plant	Plant is used for the treatment of bronchitis and constipation.
31	*Suaeda fruticosa Forsk.*	Chenopodicaeae	Shrubby seablite	Alkali blite	Whole plant	Used as antibacterial and treat to ophthalmia and eye diseases.
32	*Xanthium strumarium L.*	Asteraceae	Cocklebur	Gokharu kalan	Seeds, Roots and fruit	Treat to smallpox, stomach diseases, dysentery and demulcent.
33	*Alhagi maurorum Medik.*	Fabaceae	Camel horn	Jawansa	Whole plant	Treat to liver inflammation and gastrointestinal discomfort and used as Diaphoretic, diuretic, expectorant, laxative.
34	*Cannabis sativa L.*	Urticaceae	Marijuana	Bhang	Whole plant	Used to reduce general body inflammation, intoxication, loss of appetite.
35	*Malvastrum tricuspidatum A. Gray*	Malvaceae	False mallow	Dhamni Buti	Leaves and stem	Plant is ulcer protective and antipyretic, used to reduce fever and treat to dysentery and heal wounds.
36	*Parthenium hysterophorus L.*	Asteraceae	Feverfew	Gandi Booti	Leaves, stem and roots	Causes itching and hay fever in man. Plant is usually used for treatment of high fever, Tonic, febrifuge and emmenagogue, dysentery.
37	*Croton sparsiflorus Morong*	Euphorbiaceae	Herbe piment	Ban tulsi	Whole plant	Skin infections.
38	*Kochia indica Wight*	Chenopodicaeae	Indian bassia	Boi	Whole plant	Plant is used as cardiac stimulant and antibacterial activity and to treat dermatitis.
			GRASS			
39	*Brachiariareptans (L.) Gard. and Hubb.*	Poaceae	Running grass	Kalohtighass	Leaf	Used to treat Anemia.
40	*CenchruspennisetiformisHochest*	Poaceae	Cloncurry grass	Dhaman	Leaf	Used in jaundice, diarrhea, Leucoderma, leprosy, vomiting, fever, rheumatism, diabetes, dropsy, inflammation and, malaria, pyorrhea, peptic, ulcer, bleeding, menorrhagia and piles.
41	*Cynodondactylon Pers.*	Poaceae	Bermuda grass	Khanbalgha	Whole plant	Plant is used in fever, cold, cough, urinary problems and cure nasal bleeding, leucorrhea, dropsy and Piles.
42	*DactylocteniumaegyptiumBeauv.*	Poaceae	Crow's foot grass	Madhanagha	Resin	Used for polyurea, wounds and ulcers and plant is astringent, bitter tonic and anthelmintic.
43	*DicanthiumannulatumStapf.*	Poaceae	Ringed	Murghagha	Leaf	Nutritious grass used as fodder.

			dichanthium				
44	*EleusineindicaGaertn.*	Poaceae	Crab grass	----	Whole plant		Plant is used as diuretic, stomachic, febrifuge and also used for biliary disorders, antidote of snake venom useful in dandruff and hair loss.
45	*Imperatacylindrica L.*	Poaceae	Cogon-grass	Dabhgha	Whole plant		Used as anti-inflammatory, antibacterial and diuretic tonic.
46	*Panicumantidotale*	Poaceae	Bluepanicum	Ghumgha			It is an excellent sand binder, but of doubtful value as fodder.
48	*Saccharumspontaneurn*	Poaceae	Thatch grass	Kahi, kahu, kans	Leaves, Roots		Treatment of burning sensation, dysuria, dyscrasia, kidney and bladder stones, dysentery and bleeding piles.
49	*SetariaglaucaBeauv.*	Poaceae	Yellow foxtail	Kangni	Leaves		Average fodder grass and used for weed.
50	*SetariaverticillataBeauv.*	Poaceae	Bristly foxtail	Chirchira, Barchitta	Root		Root powder is applied on the septic wounds of cattle for early cure.
51	*Sorghum halepense Pers.*	Poaceae	Johnson grass	Baru	Stem and leaves		Used for toothache and fodder, it reduces milk production.
	Botanical name	**Family**	**English name**	**Local name**	**Habit**	**Part used**	**Medicinal uses**
				TREE			
52	*Acacia nilotica* L.	Fabaceae	Babul acacia	Kikar	Tree	Bark, flowers, leaves.	Used in gonorrhea, tooth decay, Diabetes, arthritis, Rheumatism, diarrhea, ulcers, conjunctivitis, eczema and as coagulant, astringent, cooling and increases human male sexual potentiality.
53	*Acacia modesta Wall.*	Fabaceae	Black sally	Phulai	Tree	stem bark	Used in cleaning teeth, dental, disorder and gas trouble.
54	*Capparis decidua*	Capparidaceae	kerda, kair	Karein	Small tree	Fruit, Root	Useful in intermittent fever and Biliousnessin, chest disorders, cardiac problems, swelling and burning sensation.
55	*Cassia fistula*L.	Caesalpiniaceae	Golden shower	Amaltas	Tree	Whole plant	Treatment of constipation, stomach, cough, flue, fever, eczema, boils, wounds, diarrhea and dysentery, throat swelling, fever, heart diseases and diabetes.
56	*Dalbergia sissoo*	Fabaceae	Indian rose wood	Tali	Tree	Root , Leaves	Gonorrhoea, Nosebleed, syphilis and inflamed mammary glands.
57	*Hibiscus rosa-sinensis* L.	Malvaceae	Rose mallow	Gurhal	Small tree	Flowers , leaves	Gonorrhoea, alopecia, piles, urinary discharges, seminal weakness, uterine and vaginal discharges and reduce burning sensation.
58	*Melia azedarach L.*	Malvaceae	Chinaberry	Dherk	Tree	Fruit, leaves	Skin diseases, stomach pain and have antihelmintic, antimalarial, properties and fruit is used as pesticide.

59	*Polyalthia longifolia*	Annonaceae	Mast tree	False Ashok	Tree	bark, roots	Pyrexia, rheumatism, scorpion sting, fever, skin diseases, diabetes, menorrhagia, hypertension and helminthiasis.
60	*Prosopis cineraria*	Fabaceae	Jand	Jhand	Tree	Whole plant	Respiratory problems, Blood purification, scabies, leucoderma, Muscle tremors, Leprosy, chronic dysentery and fruits in pregnancy.
61	*Tamarix aphylla*	Tamaricaceae	Rukhh	Athel tamarisk	Tree	Leaves.	Used as tonic and astringent and is used for the treatment of skin worms and internal worms of nose & ear, Toothache, hepatitis, eczema, minor wounds and skin problems (syphilis and scaly).
62	*Zizyphus mauritiana* Lam.	Rhamnaceae	Indian jujube	Bairi	Tree	Shoot	Treat measles and bronchial disorders, abdominal pains, worm infestation, remove pimples and applied to snake.
63	*Ziziphus nummularia (Burm. f.) Wight & Arn.*	Rhamnaceae	Jujube	Baer	Small tree	Bark, fruit and leaf	Used to cold, cough and throat inflammation, diabetes patient, biliousness and astringent.

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Authors' contributions: Umair designed and write this article; Rashid, Muhammad and Khan analysis article and approved as final manuscript.

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