Middle-East Journal of Scientific Research 21 (9): 1466-1471, 2014
ISSN 1990-9233

DOI: 10.5829/idosi.mejsr.2014.21.09.84238

Exploration of Ethno-Medicinal Plants and Their Ritual Uses in Bahawalnagar, Pakistan

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Abstract: The present manuscript designed to collect and enlist the knowledge about the medicinal plant species used to treat various diseases by the local inhabitants of district Bahawalnagar, Punjab, Pakistan. This is the very first study of its kind as no one has reported about the vegetation and medicinal flora of this area in recent years. A total of 56 plant species belonging to 38 families have been recorded and local herbal use of the plant species was gathered by using questionnaires and personal verbal conversations with the herbalists in the area. Out of five Tehsils, the people in Fort-Abbas area are more dependent on the folk medicines as compared to others areas of the district. The reason for the fact is due to the high poverty ratio and less approach to basic life necessities in that area. The current status of the flora is threatened by the poor management, fast urbanization, poor land utilizations, over utilization of the flora for the grazers by local communities which is calling an immediate conservational strategies to be laid down along with future studies on biochemical analyses, pharmaceutical and phytochemical isolations.

Key words: Ethno-Medicinal · Flora · Bahawalnagar · Pakistan · Diseases · Inhabitants · Grazers

INTRODUCTION

From prehistoric time humans are dependent on the plants for wood, fuel, food, medicines, tools and fodder for grazing their livestock. To cure diseases by the plants is as old as human history [1-3]. Around 20% of the plant species of the world are estimated to be used in health care systems. But most of the ethno-plants are only being used by the native community because of their less exposure [2, 4]. Ethno-botany is providing a platform to give an exposure to the ethno-medicinal plants for their present day use, re-exploration of the previously reported biological active components and their conservation status and the development of new gateways in plant sciences [5]. These ethno-medicinal p lants play an vital role in the traditional health care systems for human as well as animals. It is reported that 50% of the present day allopathic (Western) drugs are being obtained by the plant materials [6]. Medicinal plants constitute an important natural wealth of bio-chemicals that play a significant role in providing primary health care services to the people of remote rural [7, 8]. That is why, the whole world's interest is increasing day by day in the field of ethno-botany [9]. A substantial amount of foreign exchange can be earned through exporting medicinal plants to other countries. In this way indigenous medicinal plants play significant role to boost the economy of a country by earning huge

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revenue [10]. Pakistan is a large country endowed with a variety of climates having variety of ethno-medicinal plants [11].

Previously many of the researchers reported the ethno-medicinal plants and their utilization in the Cholistan desert area and few in Lal Sohanra national Park [12-14]. Southern Punjab as a whole and particularly Bahawalnagar district is strictly saying, have been neglected to conduct such floral expeditions and surveys. No one have given attention to this area and reported the plant species occur in this area. Keeping in view the importance of medicinal flora and to enlist the major plant species in wild, the study was confined with special focus on the indigenous knowledge of local people about medicinal uses of native plants. Furthermore, we collected the data about few garden plants as well to give a preliminary draft about the medicinal wealth of the area. Different areas will be compared according to the utilization ad dependence of people on folk medicinal uses of the plant species. In this manuscript we will give a general overview of the plants with medicinal importance as a whole of the district, later we will report in depth studies on five Tehsils of district Bahawalnagar (pipelines).

MATERIALS AND METHODS

District Bahawalnagar, lies in the Southern Punjab province of Pakistan (29°-57′ to 29°-95′ and longitude 73°-15′ to 73°-25′). The area is little neglected in view of any proper scientific studies and social set up. About 30 different random sites were selected to collect the ethno-medicinal data from the area during 2011-2013. All major Tehsil headquarter have been covered to collect the data including Bahawalnagar, Chishtian, Haroon Abad, Fort Abbas and Minchinabad. For the collection of folk medicinal uses data, we used to have verbal communication and designed questionnaires to interview the herbalists in the area, senior villagers and some farmers as well. We used to collect the plant specimens regularly from the study area, pressed, dried and mounted on the herbarium that later we kept at department of Botany, Govt. Sadiq Egerton (SE) College, Bahawalpur, Pakistan. After given them the voucher number, few plants sent to Herbarium of Pakistan Islamabad for further confirmation and identification. Further, photographs also taken for each plant species to maintain the digital record of the medicinal flora of this area at the institute. For the identification of the collected plants, we used the field guides and flora of Pakistan [15-20].

RESULTS AND DISCUSSION

A total of 56 plant species belonging to 38 families have been found to poses certain medicinal properties and being used by the local communities or focal herbalists. The plant encountered fall in various group depending on their habit such as herbs, sedges, grasses, shrubs and trees. Plants playing a crucial role in the service of mankind in various forms such as food, shelter, clothing and medicines [21]. More than 80% of the world population depend on phytomedicines or traditional medicines in different forms. In Pakistan same is the trend that majority of the people particularly in rural or remote areas routinely using plants to cure different diseases and ailments [22]. The various usage of the 56 plant species along with other useful information is given in Table 1.

Various parts of the plants are in use viz. leaves, bark, seeds, flowers, stems, roots, root bark, extracts and decoctions. We calculate percentage of recipe preparations for the treatments of various diseases we follow the same procedure described by Qureshi *et al*. [23] (data not shown). This gives an idea that majority of active phytochemicals are present in most frequently parts of the plants. The intake or application of the herbal medicine are various as direct, single, or in combinations with certain foods and quiet effective against gastric problems, common fevers, diarrhea, cough and cold, and various human genital problems. Though the administration of these plants to cure various ailments purely based on the verbal knowledge passed generation after generation to the people. Based on the local utilizations of these plants we suggest that the scientific studies of all these herbal drugs are highly desirable to establish their efficacy for safe use. The survey highlights a great potential for ethno-medicinal uses of the flora along with the need to protect and conserve the later. The notion to conserve the flora, in its natural environments is solely be achieved by the involvement of resident communities as well as governmental and non-governmental agencies, is observed due to the current status of the medicinal flora is facing a threat to be extinct. Different factors to threat the flora include the change in land utilization, urbanization, poor management, over utilization of the plant for the herbivores.

Table 1: Medicinal plants of district Bahawalnagar, Southern Punjab Province, Pakistan.

Family	Botanical name	Local name(s)	Part(s) used	Medicinal use(s)
Aizoaceae	*Trianthema portulacastrum*	It-sit	Whole plant	Cough, wound-dressing, poultice, gonorrhoea.
Amaranthaceae	*Achyranthus aspera*	Puth-kanda,	whole plant	Bronchitis, itching, abdominal pains, dyspepsia, dysentery, blood purification, kill intestinal worms, skin care, asthma and fever.
	Amaranthus spinosus	Chulai	Leaves and roots.	Diuretic, internal bleeding, diarrhea, excessive menstruation, snake bites, ulcerated mouths, vaginal discharges, nosebleeds, wounds, menorrhagia, gonorrhea, eczema.
Anacardiaceae	*Mangifera indica*	Aam	Flowers, leaves, kernel, fruits.	Diarrhea, scabies, rheumatism, round worms, vomiting, asthma, diarrhea, bleeding piles, catarrh of the bladder, chronic urethritis, contraction of vagina, diuretic.
Apocynaceae	*Nerium oleander*	Kaner	Leaves and roots	Heart diseases, diuretic, antibacterial, snake-bite, scabies, reduce swellings, cancer, ulcers and leprosy, scaly skin treatment.
Arecaceaes	*Phoenix dactylifera*	Khajoor	Fruit, gum and seeds.	Astringent for intestine, sour throat, colds, bronchial catarrh, fever, cystitis, gonorrhea, liver , diarrhea and genitor-urinary ailments, diuretic, demulcent, sexual disorders.
Asclepidaceae	*Calotropis procera*	Aak	Flowers, leaves and latex.	Pain and swellings, filariasis, deafness, wound healing, skin diseases, baldness, piles and tooth-ache.
Asphodelaceae	*Asphodelus tenuifolius*	Piazi	Whole plant	Diuretic and inflammation.
Asteraceae	*Conyza ambigua* Soreness of throat.	Rui	Leaves	
	Carthamus oxyacantha	Pholi	Seeds, Flowers and oil	Ulcers, itching, tonic, purgative, joint pain reliving, diaphoretic, fevers, measles and eruptive skin treatment.
	Launaea procumbens	Jangi gobi	Whole plant	Painful maturation and galactagogue.
	Sonchus asper	Asgandh	Aerial parts	
fluid				Regulate menstrual cycle, alter liver function, stimulate elimination, cancer, warts, inflammation, fever, wounds and burn.
	Xanthium strumarium	Kandiari	Leaves roots, seeds and fruits	Appetizer, diuretic, antibacterial, antifungal, antispasmodic, cytotoxic, stomachic, sinusitis, constipation, diarrhea, lumbago, leprosy, tumors, bladder complaints.
Boraginaceae	*Cordea obliqua*	Lasoora	Gum, fruit and seeds.	Lungs disorder and gonorrhea treatment. Disease of the spleen chest diseases, cough, chronic fever treatment. Anti-inflammatory activity.
Capparidaceae	*Capparis deciduas*	Kareer	Root, Fruit	Skin boils, eruptions, swelling, chronic, foul ulcers, asthma, vomiting, intermittent fevers, arthritis, dyspepsia, constipation, intestinal worms, gout, cardiac disorders, urinary infection,
	Capparis spinosa	Caper	Root, bark and latex.	Dropsy, anemia, arthritis, gout, improve liver function, gastrointestinal infections, diarrhea, rheumatism, cough, eye infection, flatulence reduction, diuretic, vermifuge.
Chenopodiaceae	*Chenopodium album*	Bathoo	Whole plants	Antirheumatic, rheumatism, insect bites, sunstroke, swollen feet, bloody dysentery, ulcer, intestinal worms, urinary retention, kidney diseases and sexual stimulant.

Table 1: Continued

Family	Botanical name	Local name(s)	Part(s) used	Medicinal use(s)
Convolvulaceae	*Convolvulus arvensis*	Leli	leaves, flowers and root	Spider bites, reduce profuse menstruation, fever, heal wounds laxatives and emetic.
	Ipomea carnea	Chota aak	Stem, Fruits, Leaf, Seeds and roots.	Anti-cenogenic and oxytoxic
Cucurbitaceae				
	Citrullus colocynthis	Tuma	Dried pulp of fruit and root	Tumor, ulcer or cancer cure, constipation and insect repellent.
	Cucumis melo var. agrestis	Chiber	Fruit	Digestion and stomach disorders.
Cuscutaceae	*Cuscuta reflexa*	Akash bail	Whole plant	Anthelmintic and carminative, bilious disorders, fevers, pain killer, itchy skin, diuretic, jaundice and coughs.
Cyperaceae	*Cyperus rotundus*	Deela	Tubers	Appetizer, anthelmintic, biliousness, pruritis, pain, vomiting, epilepsy , diuretic, diaphoretic, anthelmintic, vulnerary ulcers, sores, fevers and dyspepsia.
Euphorbiaceae				
	Euphorbia hirta	Dhoodak booti	Leaves and its extract.	Kill intestinal worms, diarrhea, ulcer, wounds and burn healing.
	Ricinus communis	Arind	Whole plant	Skin boils, swellings, increase milk production in mother, rheumatism and baldness.
Fabaceae				
	Albizia lebbeck	Siris	stem bark	Pain reliving, skin texture improvement, string (insects) bites treatment, skin and respiratory disorders, wounds or injury treatment, blood purification, nasal infusion.
	Melilotus parviflora	Sainji	Whole plant, seeds	Antispasmodic, emollient, analgesic, insect repellent, tonic, astringent, swellings, tumors, skin rash, wounds, gastrointestinal problems, cold and genital organ diseases.
	Pongamia glabra	Sukh Chain	Bark, leaves, flowers, seeds and oil	Ulcers, strengthening the gums, wounds healing, swellings relief, nasal therapy, arthritis, indigestion, flatulence, liver diseases and cough.
Labiatae	*Osimum bacilicum*	Niaz-bo	Leaves, flowers, seeds, root and extract.	Stomach cramps, indigestion, carminative, stomachic feverish illnesses, nausea, migraine, insomnia, depression, exhaustion, snake bites, skin infections, gonorrhea, dysentery, chronic diarrhea, eyewash, kill intestinal worms and aromatherapy.
Lamiaceae	*Mentha longifolia*	Podina	Leaves and stem	Menstrual disorders, indigestion, flatulence, pulmonary infection, congestion, headache, fever, cough, colds and urinary tract infections, swelling, wound healing.
Leguminosae	*Prosopis juliflora*	Kabli kiker	Branches, bark, Pods, Gum and Leaves.	Burn treatment, Dermatological ailments, Digestive problems. Antibacterial, Soothing, astringent, and antiseptic, Purgatives. Fever, headache, bladder infection, sunburn treatment.
Lythraceae	*Lawsonia inerma*	Mehndi	Leaves, flowers and seeds.	Pain, ulcer, edema, baldness, graying of hair, burning sensation, headache, hepatitis, skin diseases, dysmenorrhea and anemia.
Malvaceae				
	Abutilon indicum	Karandi	Leaves, roots, flower and seeds	Fevers, chest affections, gonorrhoea, urethritis, eyewash, mouthwash, inflammation of the bladder, ulcers, piles, haematuria and leprosy.
	Bombax malabaricum	Simbal	All plant, Gum, Seed, Bark	Aastringents for diarrhea, gonorrhea, dysentery, conjunctivitis of infants, ulceration of the bladder, treatment of genital organs, gonorrhea, inflammation.
	Malva parviflora	Cheeseweed	Whole plant	Swellings, running sores, demulcent cough and ulcer in the bladder.

Table 1: Continued

Family	Botanical name	Local name(s)	Part(s) used	Medicinal use(s)
Meliaceae	*Melia azedarach*	Neem	Leaves, Flower, Oil, Seed.	Vermifuge, insecticide, astringent, tonic, antiseptic, anti diabetic, anti bacterial, anti viral, kill worms and ulcers, malarial fever, blood purification.
Mimosaceae	*Acacia nilotica*	Kiker	Fruit, bark and leaves.	Ulcers, leprosy, colds, congestion, coughs, dysentery, fever, gallbladders, hemorrhages, leucorrhea, ophthalmia, sclerosis, smallpox and tuberculosis
Moraceae	*Ficus religiosa*	Peepal	Whole plant	Ear drops, heart diseases, constipation, vomiting, wounds healing, inflammations, stomatitis, ulcers, gout, gum diseases, digestion, foul taste, asthma, urinary troubles.
	Morus nigra	Shehtoot	Whole plant	Antibacterial, astringent, diaphoretic, colds, eye infections, nosebleeds, antirheumatic, diuretic, toothache, expectorant, asthma, coughs, bronchitis, oedema and diabetes.
Myrtaceae	*Euclyptus citriodora*	Safeda	Leaves and oil.	Antiseptic and fumigant, cold, lung disorders, ulcers, cough. diabetes, Hypoglycemia.
Oleaceae	*Jasminum grandiflorum*	Chanbeli	Flowers, roots, stem and bark	Antidepressant, exhaustion, skin dryness, conjunctivitis and dermatitis, diuretic, breast cancer and headaches. Almost all parts of the plant are used.
Oxalidaceae	*Oxalis corniculata*	Khati booti	Flowers, leaves.	Anthelmintic, astringent, diuretic, stomachic, fever, influenza, diarrhea, traumatic injuries, urinary tract infections, snakebite, kill hookworms, skin rashes, eruptions, insect bites and burns.
Poaceae				
	Arundo donax	Nardha	Roots, leaves	Dropsy, cancer, headaches, depurative, diaphoretic, diuretic, hypertensive, diaphoretic, emollient, stimulate menstrual discharge.
	Cynodon dactylon	Khabbal	Whole plant	Eyewash, epitasis, nasal drops, inflammation, stop bleeding, scabies, fungal infections, piles, nervous disorder, hyperactivity disorder, fits, blood purification.
Polygonaceae	*Polygonum glabrum*	Chaal	Leaves	Astringent, diuretic, relieve pain, rheumatism, treatment of poison ivy rash.
Portulacaceae	*Portulaca quadrifida*	Loonak	Whole plant	Nutritive, irritable bowel, ulcerative colitis, inflammations, diarrhea, pre-menstrual bloating, anti-oxidant for chronic health problems and diuretic.
Primulaceae	*Anagallis arvensis*	Billy booti	Whole plant	Cholagogue, diaphoretic, diuretic, expectorant, nervine, purgative, stimulant, vulnerary, poultice, dropsy, skin infections and disorders of the liver and gall bladder.
Punicaceae	*Punica grantum*	Anar	Bark, seeds and Seed extract.	Diarrhea, dysentery, stomachache, hyperacidity, colitis, constipation, inflammation, teeth and gum disorder, bleeding, fever, skin, ulceration of colon.
Rhamnaceae	*Ziziphus jujuba*	Beri	Leaves, fruit, bark	Cough, heart tonic, anti-poison, anxiety, insomnia, night sweats, diarrhea, fever and.
Rosaceae	*Rosa indica*	Gulab	Leaves and oil.	Eyes and skin treatment, stomach disorder, fever, diabetes.
Solanaceae	*Datura alba*	Datura	Leaves and seeds.	Asthma, intoxication, emetic, digestion, inflammation, spasm of the bladder, muscular rheumatism, neuralgia, haemorrhoids pain, fistula, abscesses and inflammation.
	Solanum nigrum	Mako	Whole plant	Sleep enhancing, ringworm, gout, earache, gargle, mouthwash and cutaneous disorders.
	Withania coagulans	Paneer doda	Leaves, fruit and roots	Chronic fatigue, muscle weakness, tension, impotency, premature ageing, constipation, rheumatism , nervous exhaustion, memory loss , spermatorrhoea symptoms and tumors.
Verbenaceae	*Phyla nodiflora*	Bukan buti	Whole plant	Antibacterial, diuretic, treatment of hookworm and gastric troubles, fever, cough and cold.
Zygophyllaceae	*Tribulus terrestris*	Bakhra	Whole plant	Gout, impotence, abnormal urinogenital diseases, eye infection, anticonvulsant, anti-inflammatory, anti-bacterial, antifungal, endurance and stamina.

REFERENCES

1. Arshad, M., M.F. Nisar, A. Majeed, S. Ismail and M. Ahmad, 2011. Ethnomedicinal flora in district Sialkot, Punjab, Pakistan. Middle-East Journal of Scientific Research, 9(2): 209-214.
2. Ismail, S. and M.F. Nisar, 2010. Ethnomedicinal survey for important plants of District Lodhran, Punjab, Pakistan. The Biol,. 1(3): 52-58.
3. Nisar, M.F., S. Ismail, M. Arshad, A. Majeed and M. Arfan, 2011. Ethnomedicinal flora of district Mandi Bahaudin, Pakistan. Middle-East Journal of Scientific Research, 9(2): 233-238.
4. Awan, M.R., Z. Iqbal, S.M. Shah, Z. Jamal, G. Jan, M. Afzal, A. Majid and A. Gul, 2011. Studies on traditional knowledge of economically important plants of Kaghan valley, Mansehra District, Pakistan. Journal of Medicinal Plants Research, 5(16): 3958-3967.
5. Fansworth, N.R., 1996. Biological and phytochemical screening of plants. Journal of Phamaceutical Sciences, 55(3): 225-226.
6. Cunningham, A.B., 2001. *Applied Ethnobotany; people, wild plant use and conservation*: London and Sterling, VA: Earth scan publication limited.
7. Shinwari, Z.K. and S.S. Gilani, 2003. Sustainable harvest of medicinal plants at Bulashbar Nullah, Astore (Northern Pakistan). Journal of Ethnopharmacology, 84(2-3): 289-298.
8. Singh, K.N. and B. Lal, 2008. Ethno-medicines used against four common ailments by the tribal communities of Lahaul-Spiti in western Himalaya. Journal of Ethnopharmacology, 115(1): 147-159.
9. Ghorbani, A., 2005. Studies on pharmaceutical ethnobotany in the region of Turkmen Sahra, north of Iran (Part 1): General results. Journal of Ethnopharmacology, 102: 58-68.
10. Hamilton, A.C., 2004. Medicinal plants, conservation and livelihoods. Biodiversity and Conservation, 13: 1477-1517.
11. Hussain, K., M.F. Nisar, A. Majeed, K. Nawaz and K.H. Bhatti, 2010. Ethnomedicinal Survey for Important Plants of Jalalpur Jattan, District Gujrat, Punjab, Pakistan. Ethnobotanical Leaflets, 14: 807-25.
12. Shafi, M.S., M.Y. Ashraf and G. Sarwar, 2001. Wild medicinal plants of Cholistan area of Pakistan. Pakistan Journal of Biological Sciences, 4: 112-116.
13. Hameed, M., M. Ashraf, F. Al-Quriany, T. Nawaz, M.S.A. Ahmad, A. Younas and N. Naz, 2011. Medicinal flora of the Cholistan desert: A review. Pakistan Journal of Botany, 43: 39-50.
14. Wariss, H.M., M. Mukhtar, S. Anjum, G.R. Bhatti, S.A. Pirzada and K. Alam. 2013. Floristic Composition of the Plants of the Cholistan Desert, Pakistan. American Journal of Plant Sciences, 4: 58-65.
15. Nasir, E. and S.I. Ali (Eds.), 1970-1989. *Flora of Pakistan* (Fascicle series), Department of Botany, University of Karachi, Pakistan.
16. Ali, S.I. and Y.J. Nasir (Eds.), 1990-1991. *Flora of Pakistan* (Fascicle series), Islamabad, Karachi.
17. Ali, S.I. and M. Qaiser (Eds.), 1993-2009. *Flora of Pakistan* (Fascicle series), Islamabad, Karachi.
18. Chaudhary, S.A., 1969. *Flora in Lyallpur and the adjacent canal-colony districts*. West Pakistan Agricultural University, pp: 214.
19. Chaudhary, S.A., 1989. *Grasses of Saudi Arabia*. Ministry agriculture and water, Riyadh, pp:465.
20. Chaudhary, S.A., 1999. *Flora of the Kingdsom of Saudi Arabia*. Ministry of agriculture and water, National Herbarium, Riyadh, pp: 691.
21. Razaq, A., A. Rashid, H. Ali, H. Ahmad and M. Islam, 2010. Ethnomedicinal potential of plants of Changa valley district Shangla, Pakistan. Pakistan Journal Botany, 42(5): 3463-3475.
22. Haq, I., 1983. *Medicinal plants*. Hamdard Foundation Press, Pakistan.
23. Qureshi, R., M. Maqsood, M. Arshad and A.K. Chaudhry, 2011. Ethnomedicinal uses of plants by the people of Kadhi areas of Khushab, Punjab, Pakistan. Pakistan Journal Botany, 43(1): 121-133.