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Full Length Research Paper

Ethnobotanical survey of common medicinal plants used by people of district Mirpur, AJK, Pakistan

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Medicinal plants are valuable and are used for the production of various drugs. These plants are traditionally used to cure various diseases. The present research work is based on a survey conducted on traditional medicinal uses of common medicinal plants of district Mirpur AJK, Pakistan. The local, especially old people use medicinal plants for various ailments. A total of 29 plant species belonging to 20 families are reported, that are being used by local inhabitants for various purposes. In the present research work only medicinal plants and their local medicinal uses are interviewed and presented. Information was obtained by local informants having the knowledge about medicinal plants. About 7 Hakims and 58 local old men were interviewed. The information obtained by these sources is present here. For each plant necessary information like botanical name, family of plant species, local name and uses are given.

Key words: Ethnobotanical studies, medicinal plants, Mirpur AJK.

INTRODUCTION

Ethnobotany came into being when earliest man observed animals eating certain plants, and he gathered and hunted for his food and for healing his wounds or sought cover from rain and hailstorms. The exact meaning of the word “ethnobotany” is the study of botany of primitive human race. John Harshberger was the first person in 1895, who applied the term “ethnobotany”, to study the plants used by primitive and indigenous people. The awareness of ethnobotany gain wealthy use and success in experimentation on human being and lead to our familiar foods and medicines (Campbell et al., 2002). Ethnobotany deals by means of the direct time-honored and natural association among human beings and plants (Trivedi, 2002). The indigenous medicinal information of plants is helpful to ecologists, pharmacologists, taxonomists, watershed and wild life managers in civilizing the prosperity of area, besides listing the traditional uses (Ibrar et al., 2007).

Starting the prehistoric era to date, people healed themselves with local plants remedies. In the recent days, one can observe an international drift of significance in the long-established structure of medicines (Cragg and Newman, 2003). Evaluation of therapeutic herbs has turn into a latent basis of biodynamic substances of curative value. Ethnomedicinal studies have been progressively converted into fitness and protection programs in various parts of the globe (Black, 1996).

In various countries the use of medicinal plants ranges from 4 to 20%, about 2500 species of medicinal plants are being traded globally (Schippmann et al., 2002). Climate of Pakistan is wide ranging and is relatively prosperous in medicinal plants spread in excess area. These indigenous medicinal plants have been used by Hakims and in traditional medicines, people who reside in villages and rural areas, are mostly reliant in traditional system of medicines (Ikram and Hussain, 1978).

The local community of Pakistan has the awareness of centuries old traditional values of important medicinal plants of their area. This treasure is transferring to these people from generations to generations by their forefathers. Ayurvedic, Unani and Homeopathy, which are eastern systems of medication, are completely reliant on indigenous medicinal values of plants (Choudhary,

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1998). Our modern generation is not known to this precious knowledge of plants. This indigenous treasure is in danger of being lost by modern generation. There is dare need to preserve this treasure of the plants by recording it in black and white (Shinwari et al., 2002).

District Mirpur AJK is the largest city in Azad Jammu and Kashmir, which has the total area of 1,010 km^2 (390 sq mi). According to the 1998 census, Mirpur had a population of approximately 370,000 making it by far the largest city in Azad Kashmir. District Mirpur AJK is 125 km (68 miles) south east of Islamabad, Pakistan. This district is also known as "Little Britain". Mirpur district comprises of partly plain and partly hilly areas. It's hot climate, where maximum average temperature per annum is 40°C and other geographical conditions closely resemble those of Jhelum and Gujrat, adjoining districts of Pakistan. Mirpur is located at the extreme south of Azad Kashmir at an elevation of 459 m (1509 ft). Mirpur AJK lies between 33.11° and 33.34° latitude and 73.31° and 73.55° longitudes. Topography of Mirpur AJK consists of plains and the foot hills of the Himalayas. Mangla Dam is in this district which is 100 km^2, 35% electricity demand of Pakistan is fulfilled by this Dam. Mirpur AJK is named after the name of Meeran Shah. Before 450 years, ruler of this area was Gakhar family and Meeran Shah was the king, after that, this city was named Mirpur (Asad, 2009).

Bukhari (1996) carried out an ethnobotanical exploration during 1995 to 1996 in Machiara National Park, Muzaffarabad, Azad Kashmir. He reported 69 plant species were being used as crude drugs by the tribal people and folklore for treating various ailments. Gilani et al. (2001) found the ethnobotanical uses of 26 plant species belonging to 24 families from Ayubia National Park. They provided information like scientific name of the species, local name, part used and uses. They reported that the most of the plant species are quite effective remedies for different diseases such as fever, diarrhea, diabetes, jaundice, backache, stomachache, ulcers, cold and even cancer.

Medicinal plants used by local people are medicinally valuable; due to this reason, some local people trade with them (herbs, shrubs and trees) within or outside the country. The present report gives an account of the indigenous medicinal plants used by local people and Hakims in district Mirpur AJK.

MATERIALS AND METHODS

Before starting the field work on medicinal uses of plants and the study area, general information about that area was collected from the local people. A preliminary survey was done along with a local person. About 67 different sites were visited and indigenous medicinal plants that are being used in that area to treat different diseases were collected, poisoned with formalin and finally placed in polythene bags. These plants were then fetched and showed to the local old people, in order for them to note the medicinal uses of the collected plants. About 58 local informants were interviewed including 7 Hakims also, who provided the exact use medicinal plants being used.

Plant collected from area were identified and finally deposited in the herbarium of the Department of Plant Sciences, Quaid-i-Azam University Islamabad (ISL), Pakistan. Questionnaire form was compiled in an ordered form.

RESULTS

The present research work is based on the indigenous knowledge of most commonly used medicinal plants of Mirpur, AJK. A total of 29 plant species belonging to 20 families are reported from study area. Research work was focused on the traditional medicinal uses of that area. During this work 7 Hakims and 58 local informants were interviewed. Ethnomedicinal uses and data about treatment of various ailments based on the information gathered from local people by using questionnaires are given subsequently.

(1) *Achyranthus aspera* L.
Family: Amaranthaceae
Vernacular name*:* Puthkanda
Part used: Whole plant
Flowering season: September to October
Accession number: 125287; 11
Medicinal uses: This plant is shade dried and grinded in powder form then used in tooth problems. Plant extract is used to break stone from kidney and bladder.

(2) *Adiantum incisum* Forssk.
Family: Pteridaceae
Vernacular name*:* Pershoofa
Part used: Whole plant
Flowering season: Throughout the year
Accession number: 125291; 22
Medicinal uses: It regulates menses in women and it is diuretic. Leaves inclusions is used in cough and bronchitis. It is also used to recover general body weakness.

(3) *Aerua javanica* (Burm.f) juss.
Family: Amaranthaceae
Vernacular name: Boikalan
Part used: Leaves
Flowering season: Throughout the year
Accession number: 1125306*;* 27
Medicinal uses: It is carminative; leaves are boiled in water and used.

(4) *Argemone mexicana L.*
Family: Papaveraceae
Vernacular name*:* Steanasi
Part used: Flowers, leaves, seeds.
Flowering season: April to November
Accession number: 125295*;* 21
Medicinal uses: Flowers are used in common sexual

disorders, premature ejaculation, and urinary infection. It is used for bowl regulation, constipation. Yellow milky latex is applied on skin for itching and rashes.

(5) *Boerhavia diffusa*
Family: Nyctaginaceae
Vernacular name*:* Itsit
Part used: Whole plants
Flowering season: August - December
Accession number: 125304*;* 12
Medicinal uses: Leaves are emollients. The juice of plant is used for high blood pressure. For jaundice flowers are used. Leaves extract is also used to break stone from kidney and bladder. In powder form it is carminative. Used for rheumatism, poxes.

(6) *Butea monosperma* (Lam.) Kuntze
Family: Papilionaceae
Vernacular name*:* Chichra
Part used: Leaves, flowers
Flowering season: March to April
Accession number: 125302; 10
Medicinal uses: During pregnancy flowers are used to remove air from ovary. Leaves are used to treat premature ejaculation. It is used to treat piles and is purgative. Milky latex of roots is used to enhance male sexual ability.

(7) *Chenopodium album* L.
Family: Chenopodiaceae
Vernacular name*:* Bathwa
Part used: Leaves, seeds.
Flowering season: February to March
Accession number: 125288; 20
Medicinal uses: A local dish Saag is prepared and is good for somebody whose body is hot. It removes thirst. It is used as emollients. The seeds are used for unconsciousness. They are also used to relive constipation.

(8) *Calotropis procera* (Wild.) R.Br
Family: Asclepiadaceae
Part used: Whole plant
Flowering season: Throughout the year
Accession number: 125299; 06
Medicinal uses: Leaves are used for pain, burn, pus. Shoot is used to brush teeth. Milk from leaves is used to treat snake bit.

(9) *Capparis decidua* (Forsk.) Edgew.
Family: Capparidaceae
Vernacular name*:* Kreer
Part used: Flowers, roots
Flowering season: February to June
Accession number: 125309*;* 26
Medicinal uses: Flowers are used in different herbal powders. Roots in grind form are also used to mix in various powders to treat sexual disorders.

(10) *Carissa opaqa* Stapf.
Family: Apocynaceae
Vernacular name*:* Granda
Part used: Roots,leaves,berries
Flowering season: May - August
Accession number: 125311; 16
Medicinal uses: Berries are carminative, diuretic, emetic and relieve in thrust. Protect stomach lining. It is also used to treat piles, paralysis and stops diarrhea. Unripe fruit is used to make Aachar. Leaves are boiled in water and liquor is used to treat jaundice.

(11) *Cassia occidentalis* L.
Family: Caesalpiniaceae
Vernacular name*:* Kasondi
Part used: Whole plant
Flowering season: July to September
Accession number: 125303; 13
Medicinal uses: Its roots are brushed in lemon and applied in the eyes drop-wise. It gives relief to jaundice. The roots which are chilly brushed with each other are used orally, and it expels the poison of snake bite. It is also used to treat constipation.

(12) *Coronopus didymus* (L.) Pres.
Family: Cruciferae
Vernacular name*:* Nkchinkani
Part used: Whole plant
Flowering season: May to July
Accession number: 125297; 25
Medicinal uses: It is used in rheumatism. Plant extract is used for bone disorders, used to open locks among joints.

(13) *Croton bonplandianus*

Family: Euphorbiaceae
Vernacular name*:* Mirch boti
Part used: Leaves
Flowering season: June to August
Accession number: 125300*;* 01
Medicinal uses: It is carminative, leaves juice protect the stomach lining; give strength to the cardiac muscles. When leaves are chewed they expel smell from mouth.

(14) *Crozophora tinctoria*
Family: Euphorbiaceae
Vernacular name*:* Sltti
Part used: Leaves, fruit
Accession number: 125301; 03
Medicinal uses: Used in jaundice and typhoid.

(15) *Cymbopogon citratus*
Family: Poaceae
Vernacular name: Lemmon grass

Part used: Leaves
Flowering season: Throughout the year
Accession number: 125397; 52
Medicinal uses: It is carminative, emetic, sedative. It is grown at homes for ornamental purposes and also stored for tea. Its tea is best for stomach discomfort after heavy meal. Liquor is used in headaches.

(16) *Cynodon datylon* (L.) Pers.
Family: Poaceae
Vernacular name*:* Dhab
Part used: Leaves, stem
Flowering season: July to September
Accession number: 125293; 08
Medicinal uses: Plant is carminative, emetic, expels poison from body, used to treat small pox and is also used in headaches.

(17) *Euphorbia hirta* L.
Family: Euphorbiaceae
Vernacular name*:* Dhodhe
Part used: Whole plant
Flowering season: July to October
Accession number: 125294; 09
Medicinal uses: Whole plant is grind and mixed in water it is remedy to stop diarrhea. It is laxative, blood purifier and used to cure piles. Milky latex has ability to cure premature ejaculation. Measles are treated by Dhodhe.

(18) *Euphorbia prostrata*
Family: Euphorbiaceae
Vernacular name*:* Biliboti
Part used: Whole plant
Flowering season: June to October
Accession number: 125296*;* 07
Medicinal uses: It is blood purifier; used to treat skin problems that are caused by internal blood problems, avoid applying externally. Powder is used to cure premature ejaculation.

(19) *Fagonia cretica* L.
Family: Zygophyllaceae
Vernacular name*:* Tmeaan
Part used: Whole plant
Flowering season: October to January
Accession number: 125307; 04
Medicinal uses: It is purifier, carminative, and antiasthematic, diuretic and emetic. Leaves infusion is used in cough it is best. Grind the leaves and then mixed with lemon juice then it is applied to hairs, this is a best remedy to treat white hairs.

(20) *Heliotropium europaeum* L.
Family: Boraginaceae
Vernacular name*:* Nilkattei
Part used: Seeds
Flowering season: November to January
Accession number: 125305; 14
Medicinal uses: It is purifier. Flowers are used to give relief from constipation and piles. Powder of its leaves is used to treat skin problems. Seeds are not used singly these are blended in other drugs for better results.

(21) *Oxalis corniculata* L.
Family: Oxalidiaceae
Vernacular name*:* Khatmit
Part used: Whole plant
Flowering season: March to December
Accession number: 125289; 17
Medicinal uses: Saag is cooked at homes, it is best to treat jaundice. In muscular pain, its extract that is thought to protect stomach lining, is used. It is used in liver problems.

(22) *Parthenium hysterophorus.*
Family: Asteraceae
Vernacular name*:* Thandi boti
Part used: Leaves, flowers
Flowering season: May to October
Accession number: 125310; 15
Medicinal uses: It is carminative; leaves juice gives strength to stomach and relief from constipation. Some people use it in fever also.

(23) *Ricinus communis* L.
Family: Euphorbiaceae
Vernacular name*:* Arand
Part used: Leaves, seeds
Flowering season: Various seasons
Accession number: 125285; 19
Medicinal uses: Leaves are purifier, used to treat hepatitis; grind leaves are used in sexual disorders. It is also used in piles, intestinal problems, pneumonia, headache chamble (a disease in which white spots appears on skin. For urinary tract problems green leaves are brushed and mixed with hydrogen sulphide then used.

(24) *Solanum incanum* L.
Family: Solanaceae
Vernacular name*:* Kndiari
Part used: Leaves, seeds
Flowering season: All year
Accession number: 125290; 02
Medicinal uses: It is a blood purifier; seeds are mixed with tobacco ant puffed as cigarette, it is used locally to treat teeth problems, it is effective in teeth pain. For bronchitis leaves inclusion is used, regulate the bowl evacuation. Also used in urinary tract infection.

(25) *Solanum nigrum* L.
Family: Solanaceae
Vernacular name*:* Katchmatch
Part used: Leaves, stem, fruit
Flowering season: November to January

Accession number: 125286; 18
Medicinal uses: It is expectorant, antiseptic, diuretic, and laxative. Juice of its berries is best cure for jaundice. It is used to treat teeth problems, gum infection and pyorrhea. Leaves are applied externally on burn wounds. Its fruit juice along with *Ocimum sanctum* juice is used to break kidney and bladder stone. Cooked at home as Saag that is energetic.

(26) *Solanum surrattense* Burm. f.
Family: Solanaceae
Vernacular name: Mokri
Part used: Whole plant
Flowering season: June to November
Accession number: 125308; 05
Medicinal uses: Boiled fruit in water, extract is used to treat rheumatism. It is also used in flu and cold. Leaves, especially yellow fruit is boiled in water and its liquor is mostly used as a soup; it is best for pain in body, it gives strength.

(27) *Tephrosea purpurea* (L.) Pers.
Family: Papilionaceae
Vernacular name: Sarphonka
Part used: Leaves, roots
Flowering season: August to October
Accession number: 125292; 23
Medicinal uses: It is laxative and tonic. Leaves extract is used as blood purifier. Roots are frequently used for stomach problems.

(28) *Withana coagulans* Dunal
Family: Solanaceae
Vernacular name: Paneer band
Part used: Leaves, seeds, roots
Flowering season: November to April
Accession number: 125298; 24
Medicinal uses: To treat wounds its leaves are heated, then placed on wound. It is narcotic, hypotonic and used in different male problems. Powder of roots is useful to cure premature ejaculation.

(29) *Zanthoxylum aromatus* DC
Family: Rutaceae
Vernacular name: Timber
Part used: Seeds, fruit and bark
Flowering season: March to April
Accession number: 125652; 28
Medicinal uses: Seeds are stomachic, tonic and emollient. Fruit is used at homes to make “chatni”. Bark is used as miswak and is best for teeth problems especially for pyorrhea.

Recipes

(1) Leaves of *Chenopodium album* L. are cooked at homes as a vegetable dish called saag. It is an energetic dish. Old people especially take it after some days. Its procedure to cooke is similar to other saag.
(2) Fruit of *Carissa opaqa* Stapf. are used to make pickles at homes. People place the fresh unripe fruit in oil for specific time along with other pickle items like unripe mango, chilly, etc.
(3) Leaves of *Cymbopogon citrates* are shed dried and then stored. These stored leaves are used to make tea that has best lemon flavor. Leaves are boiled in water for sometime then sugar is mixed in it to make tea.
(4) *Solanum nigrum* L. is also cooked as a vegetable at homes. Its method of cooking is similar to spinach. This dish is energetic and best for rheumatism.
(5) It is most commonly used to cure joint pain. The fruit or whole plant of *Solanum surrattense* Burm. f. is used to form liquor by boiling it in water then they take it like soup. It is best remedy for rheumatism.
(6) Seeds of *Zanthoxylum aromatus* DC are used to make a local dish chatni in summer season. It is prepared by brushing the seeds in yogurt and then salt is added in it. This dish is mostly used in every home in summer. It is best for stomach problems.

DISCUSSION

The present research survey was aimed to provide medicinally valuable information about 29 indigenous plants belonging to 20 families. The main focus of this research was to gather the medicinal uses of plants, by way of their uses, and to some extent, the medicinal plants used by local people are used as remedies to cure themselves.

Ethnobotany is very helpful in identifying and solving conservations issues, as in cases where the harvesting rate exceeds the re-growth rates. It is prosperous to conserve the medicinal plants, which were harvested (Bopana and Saxena, 2007). This is in favor of the coming generations, so that they could benefit from this treasure of God, which is a real gift and blessing of nature for mankind. In modern times it is alarming that the knowledge of ethnobotany is disappearing rapidly. Westernization, collapse of traditional cultures and yet the destruction of entire ethnic groups are to blame (Bussmann and Sharon, 2006). A principal aim of such a study is to make sure that local natural history becomes a living tradition in communities; it is being transmitted orally from time to time. The results of this work can later be applied to biodiversity, conservation and community development (Martin, 1995; Qurashi et al., 2009).

These ethnomedicinal plants are a source of income and treatment for local people. In Mirpur AJK various Hakims use common local plants to cure their patients. In spite of study area, all over the world the medicinal plants are used actively in the trade and economy of the country. In the study area local medicinal plants and herbs are sold at local herbal stores. The workers of such herbal stores have a lot of knowledge about local

medicinal plants. District Mirpur AJK has an urban culture of somewhat old traditions. Indigenous plants have their own principle and choice for old people residing in the city. Almost in every house people use medicinal plants as medicine, although the ratio of people using indigenous plants is miner because of the urban culture of the area. Generation of present era lacks the knowledge of indigenous plants. However this society is also dependent upon medicinal plants directly or indirectly. In the study area, great diversity of medicinal plants was found; these plants were available in the nearby hilly areas, especially in the meadow and across the Mangla dam hills. Local people residing in villages trade these medicinal plants to herbal stores.

The ethnobotanical importance of these plants is quite useful for health care and hygiene of local people. Local women are mostly dependent on indigenous plants for the cure of skin problems and cosmetics (*Boerhaavia diffusa, Aloe vera).* These plants are a good source to interact with nature. It is crucial to have this precious ethnobotanical knowledge and it should be transferred to the younger generation also, in that we did not lose a great treasure that is disappearing rapidly. The data can be used in future for pharmacological studies.

REFERENCES

Asad MS (2009). Jammu and Kashmir Book of General Knowledge. NIKS, Mirpur. AJK., pp. 298-299.

Black MJ (1996). Transforming ethnobotany for the new millennium. Ann. Missouri Bot. Garden, 83: 58-66.

Bukhari SAH (1996). Community Machyara, Muzaffarabad Azad Kashmir. Uses of Medicinal Plants National Park. Proceeding of the first training workshop on Ethnobotany and its application to conservation, National Herbarium, NARC, Islamabad, pp. 59-66.

Bopana N, Saxena S (2007). *Asparagus racemosus* – ethnopharmacological evaluation and conservation. J. Ethnopharmacol., 110: 1-15.

Bussmann RW, Sharon D (2006). Traditional medicinal plant use in Northern Peru: tracking 2000 years of healing culture. J. Ethnobiol. Ethnomed., 2: 47.

Choudhary RP (1998). Biodiversity in Nepal: Status and Conservation. S Devi, Saharanpur (India) and Tecpress Books, Bangkok.

Campbell MJ, Hamilton B, Shoemaker M, Tagliaferri M, Cohen I, Tripathy D, (2002). Anti-proliferative activity of Chinese medicinal herbs on breast cancercells *in vitro*. Oikos, 89: 275-282.

Cragg GM, Newman DJ (2003). Plants as the source of anti-cancer and anti-HIV agents. Ann. Appl. Biol., 143, 127-133.

Gilani SA, Qureshi RA, Farooq U (2001). Ethnobotanical studies of Ayubia National Park District Abbottabad, Pakistan. Online J. Biol. Sci., 1(4): 284-286.

Ibrar M, Hussain F, Sultan A (2007). Ethnobotanical studies on plant resources of Ranyal hills, District Shangla , Pakistan. Pak. J. Bot., 39(2): 329-337.

Ikram M, Hussain SF (1978). Compendium of Medicinal Plants. PCSIR Lab., Peshawar.

Martin GJ (1995). Ethnobotany: A People and Plants Conservation Manual. Clapham and Hall, London, New York, Tokyo.

Qureshi RA, Ghufran MA, Gilani SA, Yousaf Z, Abbas G, Batool A (2009). Indigenous Medicinal Plants used by Local Women in Southern Himalayan Region of Pakistan, Pak. J. Bot., 41(1): 19-25.

Shinwari ZK, Gilani SS, Akhlas M (2002). Sustainable Harvest of Medicinal Plants at Bar and Shinaki Valleys, Gilgit (Northern Pakistan). Consultancy Report: WWF-P, Gilgit.

Schippmann U, Leaman DJ, Cunningham AB (2002). Impact of cultivation and gathering of medicinal plants on biodiversity: global trends and issues. In Biodiversity and the Ecosystem Approach in Agriculture, Forestary and Fisheries. Ninth Regular session of the commission on Genetic Resources for Food and Agriculture. FAO, Rome, Italy, pp. 1-21.

Trivedi PC (2002). Ethnobotany: An overview, Ethnobotany. Aavishkar, Publishers, Distributers, Jaipur, India. pp. 1-10. www.pndajk.gov.pk/images/maps/Dist_Mirpur.jpg.