

ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS FROM TEHSIL DARGAI, DISTRICT MALAKAND, PAKISTAN

SHAH ZAMAN^{1,2}, ALI HAZRAT^{1,2} AND SHARIATULLAH¹

¹*Department of Botany University of Malakand, KPK-Pakistan.*

²*Shaheed Benazir Bhutto University Sheringal Wari campus, Dir upper-Pakistan.*

Corresponding author email: ali_hazrat8@yahoo.com

Abstract

The Ethno botanical information were collected from 40 plants, belonging to 26 families, from Tehsil Dargai, District Malakand Pakistan. Among these, 12 are trees, 18 are herbs, 7 are shrubs and 2 are climbers. Questionnaires was used to collect data on the traditional Knowledge about medicinal plants from local people. The detailed local uses, part used, recipe preparation along with their local names and disease treated were recorded for each species. Many of these plants have more than one local use. There were 19 species present in local market, 8 plants were found as indicators of the area, and 8 species are used for burning, fodder, furniture and timber. The other species were found useful and effective for the treatments of various diseases like Diarrhea, Cholera, Dysentery, Fever, Cough, and Cold, Tonic, Daily food, Diabetes, Blood purifier, Throat diseases, Skin diseases, Cleaning teeth and Urine trouble. Economic importance of these medicinal plants are also described.

Introduction

Medicinal plants contain compounds of therapeutic values so are used to cure human disease since remote time. (Nostro *et al.*, 2000). Among world population about 80% people depends on medicinal plants use, which purely comes from medicinal plant materials (WHO, 1993).

The country like Pakistan is gifted with the wealth of medicinally important plants. The country possess a valuable tradition of herbal therapeutics, its rural population yet depends on traditional system of medicine for their health related matters. Pakistan possesses different ecological regions varied climatic and soil conditions hence the country flora is very rich. About 6000 species of phanerogams found in Pakistan. According to an unpublished report of PFI (Pakistan Forrest institute), Pakistan locally trade 200 herbal drugs and widely export 75 crude herbal drugs. About 85% of these crude herbs are collected from the wild by the indigenous people (Shinwari and Qureshi 2011 and Hazrat *et al.*, 2010).

Ayurveda traditional Indian system of medicine was evolved round about during the age of 2500 B.C. This system of medicine was acquired by Hindu people of sub continent. However the Muslim people of sub-continent adapted the popular different type of medicine system called Unani. However with time they get benefitted from each other. The Unani type of medicine system is the dominant one in Pakistan. 50000 Hakims perform their services in various parts of Pakistan (Shinwari *et al.*, 2002). From Unani system of medicine the rich flora of Pakistan possess 2,000 medicinally important species of which the documented data exist about 400-600 species. The people of remote areas in Pakistan use these plants on the basis of their own experience for various problems of health due to non availability of allopathic doctors, medicines and fear of side effects associated with modern medicines. (Shinwari & Gilani, 2003).

The aims of this study were to explore the ethnobotanical nature of Tehsil Dargai and its documentation.

Materials and Methods

The study was conducted during September 2010 to September 2011 to document the traditional uses of plants of District Malakand, Pakistan. The information were collected from old peoples of various localities e.g., (Sakhakot, Koot Meena, Ghari Usmani Kheel, Petao, Dargai, Warteer, Kharkai, Qaldara, Patakk.).

The people of different age groups were interviewed and informations like: local name of plants, its nature, local uses, parts used and distribution, about the taxa were enquired.

The specimens collected at every stage of their growth and reproduction stages, from different localities habitats of above mentioned locations. The single specimen collected in the late flowering season having both flowers and young fruits.

After collecting the plants specimens were pressed, air dried and mounted on herbarium sheets. The identification was made in Department of Botany University of Malakand and voucher specimens were

deposited in the Herbarium of University of Malakand. Various market survey was carried out to explore the economic and commercial values of these indigenous plants.

Results and Discussion

A total of 40 plants were collected from the different sites of the area. Each plant was identified with the help of flora of Pakistan. In the study questioner was designed to collect the folk use of the plant and to document the recipes as mention in Table 1.

The knowledge about medicinal plants and their preparation is now confined mostly to old people. The younger generations are rapidly adopting the allopathic medicines and traditional medicinal plants are now seldom used. According to Khan and Khatoon, (2007), due to the death of older people the local knowledge related to medicinal plants usage is under high risk of elimination from the local communities. The situation is more serious in this region where the knowledge of using traditional plants among the young population is extremely low. The ratio of using medicinal plants is however still prominent among the women and old population thus it is necessary to promote knowledge of medicinal plants to the young population. Similar survey has been conducted by (Shinwari *et al.*, 2011). The forest area and natural habitats of the plants is under high threat of reduction due to the urbanization and agricultural practices for the production of crops. Similar results have been reported by Khan and Khatoon (2008). Ten pathological groups were made on the basis of most treated illnesses or troubles (Caverroa *et al.*, 2011). The medicinal plants of this region have been grouped under seven therapeutic classes such as Diarrhea, Cholera, and Dysentery (A): Cough, Cold, Fever (B): Tonic (D): Diabetes (E): Throat diseases (F): Blood purifier (G) and Skin diseases (H) and a single non therapeutic group Burning, Timber, Furniture, Fodder (C). The frequency of using medicinal plants is higher for group-A (24%), group-H (19%) and group-B (17%) (Fig.1). Present results showed consistency with (Cornara *et al.*, 2009). The market survey of the plants indicated highest price for *Bunimum persicum* values of important plants are presented in Fig.2

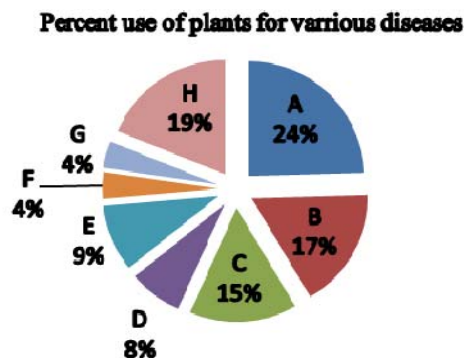


Fig. 1. Different classes of medicinal plants of Tehsil Dargai. A: Diarrhea,Cholera, Dysentry. B:Cough,Cold,Fever. C:Burning,Timber,Furniture,Fodder. D: Tonic. E:Diabetes. F:Throat diseases. G: Blood purifier. H: Skin diseases.

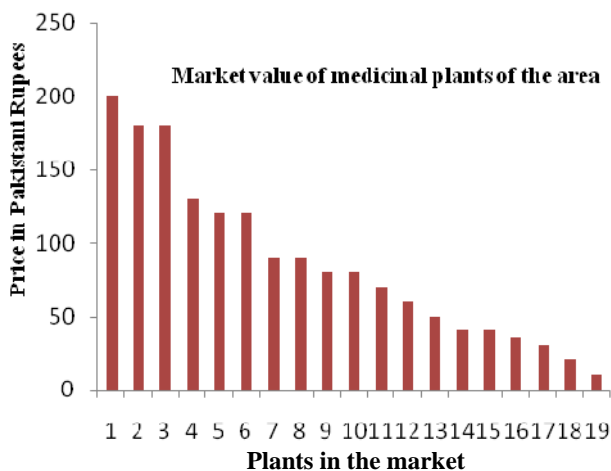


Fig. 2. Market value of 1-*Bunium persicum*. 2-*Allium sativum*. 3-*Plantago lanceolata*. 4-*Vitis vinifera*. 5-*Syzygium cumini*. 6-*Helianthus annus*. 7-*Lycopersicom esculentum*. 8-*Zanthoxylum armatum*. 9-*Ficus recemosa*. 10-*Punica granatum*. 11-*Citrus sinensis* (In dozen) 12- *Allium cepa*. 13- *Coriandrum sativum*. 14-*Monothecha buxifolia*. 15-*Solanum tuberosum*. 16-*Zizphus sativa*. 17-*Lagenaria siceraria* 18- *Morus nigra*. 19-*Menetha arvensis*.

Table 1. Ethnobotanical profile of Tehsil Dargai, District Malakand.

S.No	Botanical name	Local name	Family	Part (s) used	Ethnobotanical and Medicinal uses
1	<i>Acacia modesta</i> W	Palosa	Mimosaceae	Gum, bark, seed, flower	Back pain and maintain temperature constant
2	<i>Adiantum capillus _ veneris</i> L	Bebi aisha	Polypodiaceae	Whole plant	Extracted juice Used against Diarrhea and Cholera.
3	<i>Allium cepa</i> L	Piaz	Alliaceae	Bulb	Digestion, lower BP, Anemia. Diuretic, expectorant, Carminative; useful in piles, whooping cough and for snakes, flies, wasps and sting of scorpion.
4	<i>Allium sativum</i> L	Oaga	Alliaceae	Bulb and leaves	for cold, fever, blood pressure and skin diseases
5	<i>Aloe barbadensiss</i> Mill	Zooqam	Liliaceae	Leaves	Leaves are tied on wound for softening of wound, tumour.
6	<i>Azadirachta indica</i> (L.) Juss	Neem	Meliaceae	leaves and berries	The bark is bitter used as tonic, antiperiodic, in ulcers and eczeima
7	<i>Amaranthus caudatus</i> L	Chalwaie	Amaranthaceae	Whole plant	plant is used for purifying blood in piles, diuretic, leaves are useful for digestive system.
8	<i>Brassica rapa</i> L	Tepper	Brassicaceae	Seeds and roots	seeds are emetic and produced free vomiting in 5-10 mint and use in narcotic poisoning; roots used as diuretic.
9	<i>Bunium persicum</i> (Boiss.) Fedtsch	Kala zeera	Apiaceae	Fruit	Fruit used chiefly for flavouring porposes and medicinally as carminative, stomachic, antiseptic and lactagogue.
10	<i>Caralluma tuberculata</i> B	Pamankai	Asclepiadaceae	Whole plant	Whole plant is grinding, cooked and eaten that reduce the amount of sugar in blood and used as vegetable.
11	<i>Calotropis procera</i> R	Spalamy	Asclepiadaceae	Whole plant	Powdered flower are used for cough and asthma. Root bark is used for dysentery, breath trouble, cough and fever.
12	<i>Calendula officinalis</i> L	Ziarguly	Asteraceae	Flower head	Facilitates healing of wounds, Increase bile flow hence used to cure hepatitis, used as antiseptic and antifungal.
13	<i>Capsicum annum</i> L.	Ghat marchake	Solanaceae	Fruit	Fruit used in cooking, when they are usually stuffed with meat; used in preparation of cheese
14	<i>Capsicum frutescens</i> L	Marchaki	Solanaceae	Fruit	The crushed and powdered fruits used as stimulant, skin irritant, flavouring food and are constituents of all curry powders
15	<i>Citrus sinensis</i> (Linn) Osbeca	Malta	Rutaceae	Fruit	Used in digestive disorders, in haemorrhages, diarrhea and dysentery
16	<i>Citrus medica</i> L	Naranj	Rutaceae	Fruit	Fruit is used as, laxative, stomachic, juice is used as appetite stimulant, skin problems and urinary tract infections
17	<i>Coriandrum sativum</i> L	Danya	Apiaceae	Whole plant	Used as antispasmodic, carminative, stimulant and diuretic
18	<i>Diospyros lotus</i> L.	Amlook	Ebenaceae	Fruit and seeds	Seed are consider as sedative, while fruit is used to promote secretion
19	<i>Dodonaea viscosa</i> L.	Ghwarasky	Sapindaceae	Whole plant is used	Dry leaves are tied on wounds and used for softening of wound
20	<i>Syzigium cumini</i> (Lam) DC.	Jaman	Myrtaceae	Fruit, Leaves, Seeds , bark	The bark is astringent, used as mouthwash for ulceration and gums; juice of fruit used for stomachache, diuretic and carminatives; seed are used as a remedy of diabetes, fresh juice of the leaves is very effective for bloody dysentery.
21	<i>Ficus racemosa</i> L	Anzer	Moraceae	Fruit and milky juice	Used for stomach cleaning and to relieve constipation
22	<i>Helianthus annuus</i> L.	Nwar paras	Astraceae	Seeds	Oil is extracted from the seeds. The seeds are peeled and eaten

S.No	Botanical name	Local name	Family	Part (s) used	Ethnobotanical and Medicinal uses
23	<i>Lagenaria siceraria</i> (Molina) Standl	Kaddu	Cucurbitaceae	Fruit , seeds ,leaves	along with sugar and Used for cough, cold and heart diseases. Seed are used as brain tonic and urinary disorders. Fruits and leaves as vegetables
24	<i>Lycopersicon esculentum</i> Mill	Tamater	Solonaceae	Fruit	Fruit used as vegetable and nutritive; used for eye sight improvement, urinary disorders and for burning place of the body
25	<i>Mentha longifolia</i> L	Enally	Lamiaceae	Whole plant	Fresh leaves are edible or Leaves are boiled in water the decoction is used as carminative, diarrhea, dysentery and for colics.
26	<i>Mentha arvensis</i> L	Pudina	Lamiaceae	Whole plant	Leaves are eating or Extracted juice is Used for diarrhea and fever.
27	<i>Monothecha buxifolia</i> Falc	Gurgura	Sapotaceae	Fruits Leaves, seed	Extracted juice is poured in eye OR Leaves are tied on eyes. Leaves are used for eye infection and fruit are suitable for stomachache.
28	<i>Morus nigra</i> L	Toor toot	Moraceae	Fruit	Fruit is used for Blood cleaning and for anemia
29	<i>Nastutium officinale</i> R Br	Thermera	Brassicaceae	Whole plant	Leaves are boiled in the water and used to Maintain B.P, cure tuberculosis, urinary disorders, anemia, skin diseases and obesity
30	<i>Plantago lanceolata</i> L	Isphagul	Plantaginaceae	Leaves and seeds	Seed are boiled with milk and used as tonic, for fever, diarrhea and dysentery
31	<i>Psidium guajava</i> L	Amrood	Myrtaceae	Fruit, Leaves, Bark.	Fruit is mild laxative, very useful in dysentery, diarrhea and other digestive disorders; bark and leaves are astringent.
32	<i>Punica granatum</i> L.	Anar	Punicaceae	Fruit and leaves	Peel is used to extract of peel is used in Diarrhea, Dysentery, digestion and urine trouble.
33	<i>Rosa webbiana</i> Wall. ex Royle	Gulab	Rosaceae	Flower and bark	Petals are boiled in water to obtain Arke gulab which is used in Fever and eye diseases.
34	<i>Rumex hastatus</i> D. Don	Threwaky	Oxiladaceae	Whole plant	Leaves are edible. Stem is boiled in water and Used for throat diseases and cooling.
35	<i>Solanum nigrum</i> L.	Kachmacho	Solanaceae	Whole plant	Whole plant juice is used for fever; eye diseases and suitable for digestion Dysentery and eye diseases.
36	<i>Solanum tuberosum</i> L	Aloo	Solanaceae	Tubers	Juice of raw potato is very valuable in rheumatism and stomach and intestinal disorders
37	<i>Vitis vinifera</i> L	Angoor	Vitaceae	Fruit, leaves	Leaves and fruit used as astringent, stomachache, laxative, demulcent, asthma, cardiac pain and heart palpitation.
38	<i>Zingiber officinale</i> Roscoe	Adrak	Zingiberaceae	Rhizome	Used as carminative, condiment, stimulant and used in colic, diarrhea, dysentery, asthma, piles.
39	<i>Zanthoxylum armatum</i> DC	Dambera	Rutaceae	Seeds, bark, and fruit	The grinded seeds are eaten and Used as tonic and carminative.
40	<i>Zizyphus sativa</i> G	Markhany	Rhamnaceae	Fruit and leaves	Fruit are edible. Extracted juice from the leaves and Bark used to clean wounds and sores also Used in bronchitis and expectorant and blood purifier.

Conclusion

The knowledge of traditional medicines among the younger population is too poor thus older population can play pivotal role to inherit their knowledge. The medicinal plants of this region require immediate conservation due to urbanization and agriculture practices. Thus cultivation of these medicinally important plants should be encouraged.

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