

ETHNOBOTANICAL STUDIES ON SOME MEDICINAL PLANTS OF DEHRI JULAGRAM MALAKAND AGENCY, PAKISTAN

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ABSTRACT

Ethno botanical study revealed that 44 species of 31 families are being used by the local people of Dheri /Julagram Malakand Agency. These plants are invariably used as a crud drugs for treating various diseases. Local name and disease treated is recorded. Some of the species like *Mentha longifolia*, *Nasturtium officinale*, *Amaranthus viridis* and *Calotropis procera* etc., are available in abundance. The people collect these plants for their personal use only. Other species are threatened due to over collection, overgrazing and deforestation. The information collected shows that the people mostly use allopathic medicines. The ethnobotanical knowledge about the use of medicinal plants is rests most with the elders.

Key-words: Ethnobaotany, Medicinal plants, Malakand Agency, NWFP,

INTRODUCTION

Plants are invariably used by human since their origin. This human-plant interaction has led to the selection of useful plants and creation of indigenous knowledge system. This indigenous knowledge is the basis of modem plant based industry especially medicinal and pharmacognostic industry. More than 6,000 plant species of medicinal value are being used worldwide. Plants products are the only source of medicines for 75-90 percent people in the developing countries. In US alone annual value of plant-based drugs is estimated to be \$43000 million. Zaman and Khan (1970) listed the uses of 100 drug plants of Pakistan. Dcram (1981) described 31 medicinal plants along with their local uses. Afridi (1986) reported that 67 medicinal plants are used locally in the Khyber Agency. Hussain (1987) listed 55 plants with medicinal uses. Haq and Hussain (1993) stated that the locals of Mansehra are using 54 medicinal plants. Davis *et al.* (1995) provided information on plants of ethnovetemary importance that is being used for the curing of various diseases in sheep, goats and cattle in Afghanistan. Hussain and Sher (1998) observed that 87 species from five villages are used for medicinal and other uses in District Buner. Barq (1998) work on the medicinal plants of Sama Ranizai and adjoining area of Malakand Agency. Some medicinal plants from Rawalpindi have been reported (Arshad and Akram, 1999). The medicinal uses of plants from different parts have been reported by Haq and Ghani (1984), and Haq and Rahman (1990). Recently, Murad (2002) worked on the traditional uses and management practices of plant resources of Hazamao forest of Malakand Agency. Similarly Zabiullah (2002) made ethnobotanical studies on plants of Manzaray Baba, Malakand Agency. Sher and Hussain (1998) reported that the collection and trade of medicinal plants involve about 5000 families in the Malakand Division. Women and children have active participation in its collection (Sher and Shakespeare, 2000).

The review of literature shows that no reference on the medicinal plants of Julagram is available. The present study therefore, reports the medicinal plants, which are being used in the area for curing different ailments. Dheri Julagram is located in northern parts of Malakand Agency between at 34°35' N and 71°57' E. It is bounded by Dir District in the north. District Swat in the east, Bajawar and Mohmand Agencies in the west and District Mardan in the south.

The investigated area lies at altitude of 1000 m with poor monsoon influence. Winter is severely cold and temperature may falls below freezing point while summers are pleasant. The soils have good fertility with predominance of loam. Approximately 80% of the people depend upon the agricultural based economy. The vegetation is under heavy biotic pressure due to population explosion, deforestation, terracing, fire wood extraction and over grazing etc.

MATERIALS AND METHODS

The study was conducted during summer 2003 in various parts of Dheri Julagram District Malakand. The respondents of various age groups (40 to 60+ years) were interviewed through an open structured questionnaire. Generally one person amongst 10 houses was selected. The plants were collected from area, dried, preserved and identified with the help of available literature (Ali and Qaiser, 1995-2004; Nasir and Ali, 1971-1995). The voucher

specimens were deposited in the Peshawar University Herbarium (PUP) and in the Botany Department; Govt. Post Graduate Jahanzeb College Saidu Sharif Swat.

RESULTS AND DISCUSSION

The study revealed that 44 medicinal plants of 31 families are used locally for health care. Family Lamiaceae (7 spp.), followed by Solanaceae (3 spp.), Brassicaceae, Asteraceae, Euphorbiaceae, Oleaceae, Verbenaceae (2 spp. each) were important families among dicots. The remaining families had 1 spp. each. Based on the habit, there were 26 herb species, 8 shrub species, 9 trees and 1 climber. It was noted that some plants such as *Mentha longifolia*, *Adiantum*, are used singly while others used in combination with other plant parts or items such as wheat flour, sugar and ghee etc. Similarly, some medicinal plants were specific for curing one disease or might have multiple uses.

The study showed that medicinal plants were mostly collected by tenants (70%), followed by nomads (25%) and Hakims (5%). The elderly persons counted of 55% old (41-60 and above) have more knowledge, as they know 55% of the plants. The mid-aged persons had only 29% (21 to 40 years) knowledge while youngster had the least knowledge 6% (below 20 years). Seventy five% of the knowledgeable respondents were illiterate. Of the educated 25% were educated. 11% had primary education, 6% secondary, 5% matric, 1% intermediate and 2% non-formal education.

The present study revealed 5 species of ethnoveterinary importance. These plants were used individually or in a mixture with sugar, ghee etc, to treat livestock. The findings agree with those of Davis *et al.* (1995), who reported plant species used for the treatment of various diseases in sheep, goat, and cattle by the people of Afghanistan. Due to lack of knowledge, urbanization, and unbalanced grazing, the natural regeneration of important medicinal plants are adversely affected. So the most important thing is that to promote awareness among the local people, who are involved in the collection and use of medicinal plants, to protect these from over exploitation.

Following is the description of the medicinal plants of the" investigated area along with their local names, part used, family name, botanical name and local uses. The plants with in each major category have been arranged alphabetically.

PTERIDOPHYTA

1. *Adiantum venustum* Don, Family Pteridaceae (Local Name Sumbal).

It is used in biliousness, headache, backache, expectorant in the form of decoction and mixed in Brassica oil to prevent falling hair.

2. *Equisetum arvensse* Linn. Family Equisetaceae (Local Name Bandakei).

The shoots are used in curing kidney pains, intestine and stomach problems in the form of decoction. Powdered dried shoots taken with water are diuretic. Poultice from fresh shoots is mixed with flour to treat wounds.

GYMNOSPERMEAE

3. *Pinus roxburghii* Sargent. Family Pinaceae (Local Name Nakhter).

The turpentine oil obtained from bark is used as diuretic and vermifuge. The resin is used in discharging pus and treating acne.

ANGIOSPERMEAE

4. *Acacia modesta* Wall. Family Mimosaceae (Local Name Palosa).

Powdered gum is used as restorative sex tonic. Gum poultice mixed with wheat is used to treat fractured bones. The powdered gum is cooked with Desi ghee, date palm, almonds, coconuts and poppy seeds, which is called Parade (Pashto). It is give as tonic to women after delivery. Twigs are used as tooth-brush (Miswak).

5. *Ajuga hracteosa* Wall. ex Benth. Family Lamiaceae (Local Name Booti).

Shoots are boiled in water and decoction is used as carminative, blood purifier and for treating jaundice. The powdered shoots are used as vulnerary in the form of poultice. Powdered plant mixed in ghee is taken early morning to control vomiting.

6. *Amaranthus viridis* Linn. Family Amaranthaceae (Local Name Chalwai).

Shoots are boiled in water till a suitable consistency is achieved and it is then sieved and used as emollient for swelling of acne to make the skin smooth for soothing.

7. *Calotropis procera* (Wild) R.B. Family Asclepiadaceae (Local Name Spalmai).

Latex mixed with sarsoon oil is used as anti lice agent. Dried powdered flowers are used as stomachic and for treating cough. Cigars of powdered dried leaves are used as asthmatic. Shoot in the form of paste is applied to check elephantiasis. Light tincture of leaves is used in intermittent fever.

8. *Cannabis sativa* Linn. Family Cannabinaceae (Local Name Bhung)

The leaves either in the form of poultice or warmed on semi-oily frying pans are applied to treat the dislocated organs. Shoots are crushed and mixed with milk to prepare drink as called Tandai (Pashto), which is highly narcotic. The decoction is used for spasmodic cough and asthma and is astringent that is why it is called as Tandai.

9. *Capsella brusa-pastoris* (Linn.) Medik. Family Brassicaceae

(Local Name Bempaisa, bibiumsa). The extract from fresh flowering tops is used to control external hemorrhage. Seeds are used for curing diabetes and rheumatism. Fresh plant is eaten to reduce blood pressure.

10. *Carthamus oxyantha* Bieb. Family Asteraceae (Local Name Kareza).

Seeds are eaten to check urination. Seed oil is used to control hypertension and as a useful stomachic.

11. *Cichorium intybus* Linn. Family Asteraceae (Local Name Shinguly, kashni).

It is used as stomachic. Decoction is useful in treating sore throat and biliousness. The powdered roots are taken with a glass of milk to treat vomiting.

12. *Celtis tetrandra* Roxb. Family Ulmaceae (Local Name Thagha).

Young shoots are crushed and mixed with flour and used for treating swellings or inflammation of skin.

13. *Chenopodium album* Family Chenopodiaceae (Local Name Sarmae)

An infusion of shoot is considered as carminative, and curing cough. The decoction of shoot is used for stomachic. Cold decoction is applied to the skin to treat eczema.

14. *Cynodon dactylon* Linn. Family Poaceae (Local Name Kabal).

Shoots are used as diuretic in dropsy. Decoction is used to control bleeding from nose. Roots are used as adulterants and substitute for couch grass.

15. *Diospyros lotus* Linn. Family Ebenaceae (Local Name Amiok)

The decoction of ripened fruit is used for curing dysentery. The fruit is useful in treating acidity.

16. *Dodonaea viscosa* (Linn.) Jacq. Family Sapindaceae (Local Name Ghuraskay).

The powdered leaves are mixed with flour, salt and gur (raw sugar), which are used as bandage to treat wounds and swelling. Leaves are used to discharge the pus. Shoots are used as anthelmintics for cattle. The poultice is applied to cure rheumatic joint pains. Powdered seeds are used for relieving body pain.

17. *Euphorbia helioscopia* Linn. Family Euphorbiaceae (Local Name Mandanu).

The plant is generally considered as poisonous. Hakims use shoots as laxative. The latex is applied for healing of external swellings.

18. *Ficus palmata* Forssk; Family Moraceae (Local Name Waroky inzer).

Latex is applied to draw out prickles and warts. Fruit is edible and used as stomachic purgative.

19. *Fumaria indica* (Husskn) Pugsley. Family Fumariaceae (Local Name Papra).

Shoots are used as diuretic, mild laxative or purgative. Decoction is used to treat fever. The dried plant is mixed with sugar and eaten with water at night as anthelmintics and vermifuge.

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20. *Jasminum officinale* Linn. Family Oleaceae (Local Name Rambail chambail).

Boiled flower with suitable consistency are used as emollient. It yields oil, which is mixed with sarsoon oil and rubbed on head as nerve sedative. Powdered dried roots are eaten with gur (raw sugar) for the removal of ringworms.

21. *Juglans regia* Linn. Family Juglandaceae (Local Name Ghoz)

Seeds kernel mixed with ghee and honey is used as a brain tonic. The bark and leaves extract obtained through boiling and used for treating sore throat as gargle. Bark is used to clean teeth, which is called Dandasa (Pashto).

22. *Justicia adhatoda* Linn. Family Acanthaceae (Local Name Baikenr).

Decoction of leaves is used as expectorant. From leaves poultice are tied over wounds, rheumatic joints and inflammatory swellings. Leaves decoction is used in respiratory diseases.

23. *Mallotus philippensis* (Lam.) Muell. Family Euphorbiaceae (Local Name Kambela).

The powdered fruit is used as purgative, anthelmintics and yermifuge for cattle and for cattle's fever.

24. *Malva neglecta* Wall. Family Malvaceae (Local Name Panerak)

Leaves are used as pot herb, which are mucilaginous that act as laxative and stomachic. It is applied to external inflammation as poultice. The cooked potherb has mucilaginous demulcent and emollient sensation.

25. *Melia azadrach* Linn. Family Meliaceae (Local Name Tora shandai, Bikiana)

Bark is cathartic. Poultice of flowers or leaves is applied to relive headache. Powdered dried fruits are used for treating gastric problem. It is considered as good anti sugar agent. Seeds are boiled and a creamy substance is prepared which is used for skin eruptions. The leaves are applied to prickles during hot summer days.

26. *Mentha longifolia* Linn. Huds Family Lamiaceae (Local Name Enaley)

Commonly used as stomachic. The dried powdered leaves and young shoots mixed with slight salt are taken with water to treat intestinal pain and as carminative. The powdered or fresh shoots mixed with chillies and diluted curd is given to cattle for curing internal inflammation. Decoction is useful to treat cough and vomiting. It is also use as stomachic.

27. *Mentha spicata* Linn. Family Lamiaceae (Local Name Pudina).

The powdered shoots are mixed with sugar and taken with water early in the morning before breakfast to control vomiting.

28. *Micromeria biflora* (Buch-hamp ex D. Don). Benth. Family Lamiaceae (Local Name Narai shamakai).

The herb is carminative. The milkmen wash their milk pots with this plant to avoid bad smell caused by bacteria and fungi.

29. *Mirabilis jalapa* Linn. Family Nyctaginaceae (Local Name Gul-e-inzuk, gul-e-bada).

Leaves are tied over as bandage to discharge pus and lessen inflammation. The dried powered roots are purgative.

30. *Nasturtium officinale* R.Br. Family Brassicaceae (Local Name Thermera)

It is used as potherb. Concentrated decoction is considered as restorative expectorant and controlling cough.

31. *Olea ferruginea* Royle. Family Oleaceae (Local Name Khona)

Leaves are chewed to cure sore throat. The oil obtained from the fruit is used as emollient and for treating backache, rheumatic joints and as impetigo.

32. *Otostegia limbata* (Benth.) Boiss. Family Lamiaceae (Local Name Spinazghei).

Extract from fresh leaves is applied to treat children's swollen gum and also use in ophthalmic diseases.

33. *Papaver pavonium* Schrenk Family Papaveraceae (Local Name Radey)

Powdered seeds are used to treat cough. The dried or fresh petals are diaphoretic.

34. *Platanus orientalis* Linn. Family Platanaceae (Local Name Chinar)

The powdered dried bark and leaves are mixed with oil and used as bandage for treating dislocated organs and to discharge pus. The decoction is useful in curing throat problems.

35. *Rubus fruticosus* Linn. Family Rosaceae (Local Name Kerwara)

Infusion of leaves is treatment of diarrhea. Young shoots are boiled with *Ajuga* spp. *Adiantum* and *Oxalis* and decoction is obtained, which is used as tonic. Fruit is edible and used as carminative.

36. *Rumex dentatus* Linn. Family Polygonaceae (Local Name Shalkhay)

Leaves are warmed and applied to wounds for healing. The boiled leaves are eaten as stomachic.

37. *Salvia moolcroftiana* Wall. ex Benth. Family Lamiaceae (Local Name Kharghuag).

Leaves are externally applied to inflamed skin and acne as poultice to release pus. Dried powdered leaves mixed with sugar are taken early in the morning or at night as anthelmintics and vermifuge.

38. *Solanum nigrum* Linn Family Solanaceae (Local Name Kachmachoo or Karmachoo).

Hot water extract and decoction is used in treating cold and cough. Shoots are crushed, mixed with flour to make a poultice, which is used as bandage to heal rheumatic joints. Boiled fruit are used in curing diarrhea. Fruits are treatment for diabetes patients.

39. *Solanum surattense* Burm f. (*S. xanthocarpum*) Family Solanaceae (Local Name Maraghone).

The extract from berries is a treatment for sore throat. Root decoction is expectorant, used in cough. The dried powdered fruits are treatment for diabetics. An infusion of flowers in salt solution are said to be useful for curing sore eyes.

40. *Teucrium stocksianum* Boiss. Family Lamiaceae (Local Name Aspabotay).

Decoction of the plant is used for curing jaundice and as blood purifier and for treatment of burning sensation of feet.

41. *Verbascum thapsus* Linn. Family Scrophulariaceae (Local Name Khardug)

Leaves covered with mustard oil are useful for treating rheumatic joints, inflamed skin and discharging pus.

42. *Verbena officinale* Linn. Family Verbenaceae (Local Name Shamakai)

Decoction is used for treating diarrhea, as a body coolant temperature and as blood purifier. It is also useful in controlling diabetes.

43. *Vitex negundo* Linn. . Family Verbenaceae (Local Name Marvandai)

Fresh leaves are used as bandage for chest pain and backache. Decoctions of roots are used as expectorant. Leaves extract is used as antiseptic.

44. *Withania somnifera* (Linn.) Dunal. Family Solanaceae (Local Name Kotilal)

The powdered roots and leaves are used as poultice for treating painful swellings, ulcers and for rheumatism. The dried powdered fruits are used as astringent. The roots are also used to cure fever in cattle.

ETHNO VETERINARY PLANTS

Following five species are used for the treatment of various ailments in livestock.

1. *Dodonaea viscosa* (Linn.) Jacq.

Dried or fresh leaves are administered to cattle as anthelmintics.

2. *Justicia adhatoda* Linn.

Shoots are given to cattle to maintain body temperature after giving birth to calf. 5. *Mentha longifolia* (Linn.) Linn. The powdered dried leaves in combination with chillies and diluted curds are given to cattle to decrease internal inflammation.

3. *Mallotus philippensis* (Lam.) Muell.

The powder dried fruits are used for curing diarrhea. It is either mixed with flour or with oilcakes as vermifuge.

4. *Withania somnifera* (Linn.) Dunel.

The powdered dried fruits are used as healing agent of the wounds of the mammary glands in cattle.

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