

Medico-Botanical Investigation of Medicinally Important Plants from Galliyat Areas, NWFP (Pakistan)

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Abstract

A survey of medico-botanical investigation was conducted between October 2003 to April, 2004 in the Galliyat areas of North West Frontier Province (NWFP) of Pakistan. Our survey focus on four specific Gullies: Donga Galli, Bara Galli, Nathia Galli and Chhangla Galli. Indigenous knowledge of local inhabitants about the use of native plants were collected during field trips through questionnaire. The medico-botanical investigation about 30 species belonging to 28 genera of 21 families were recorded during course of study. Voucher specimens were collected and deposited in the botany lab. of University of Arid Agriculture, Rawalpindi for future references. For each species the information regarded to the botanical names followed by local name, family name, flowering period, voucher specimen number, part used and ethnomedicinal uses.

Introduction

Galliyat is highly mountainous track situated in south east of North West Frontier Province of Pakistan. The study area includes Donga Galli, Bara Galli (Barian), Nathia Galli and Chhangla Galli (Map-1). It is located at 33-35°N latitude and 73-74°E longitude with altitude between 7000-9500 feet. In general, climate of the area is pleasant to extreme cold type in different months of the year. The area receive major part of the rainfall during monsoon i.e. from June to the middle of September. In winter snow ordinarily falls above an altitude of 3000 feet and occasionally even lower, but melts rapidly except at high altitudes and on northern aspects above 6000 feet. Generally snowfall starts from late December to March. Temperature goes up slowly from January to June till the start of monsoon rains. Then it starts falling steadily till a rapid fall of temperature in December and January (Rahim, 2000)

The indigenous traditional knowledge of herbal plants of communities where it has been transmitted orally for many years is fast disappearing from the face of world due to transformation of traditional culture. The collection of information about natural flora, classification, management and use of plants by the people holds importance among the ethnobotanists. The local people and researcher face the challenging task of not only recording knowledge of plants, but also applying the results of their studies to biodiversity conservation and community development. (Ahmad *et al.*, 2003)

For thousands of years, herbs have filled medicines bag, cosmetic bowl, culinary spice jars, perfumes vials and dye pots. The use of medicinal plants has played very important role in Galliyat (Murree), since pre-historic era. The dry vast deserts of the province had been considered to be source of plant stock with higher contents of active chemicals than the tropical rainy areas of sub continent. The multipurpose use of countless plants available in the mountain areas of the uplands of Galliyat has been indeed interesting subject among the rural population, particularly among men and women. The people have their own plant classification according to use and effects on the health. No scientific studies exist on the ethnobotanical basis of plants, except scanty, unplanned work done on the enlistment and location of the valuable plants. Pakistan being rich in herbal resources offers a great scope for ethnobotanical studies. The necessity for exploitation of indigenous knowledge of drugs has long been felt with increasing needs of drugs and medicines by human beings. It is desired that indigenous plant material should be collected, identified, processed and utilized for medicinal uses. Keeping in view the importance of medicinal flora of Galliyat

areas, the study was confined to collect the indigenous knowledge of local people about medicinal uses of native plants. The medico- botanical study was the need of time in order to record the indigenous knowledge about the plants from the local people of the area. So the present study was planned to investigate a local medicinal uses of plants for further investigation by plants scientists, pharmacologists and phytochemists to aware the local communities about the conservation strategies of these valuable natural resources for coming generations and to collect valuable information which has been transmitted orally from ancestors and knowledgeable persons to record these information for wider circulation.

Methodology

During the fieldwork, trips were arranged at proper harvest time of plants collected and their use by the inhabitants. The information about the plants were gathered during field trips in and around various villages of Galliyat region. Interviews of 100 informants including local inhabitants (both men and women) herbalist and herb sellers were held. Questionnaires were adopted for interviews. Medico-botanical investigations about the medicinal plants were collected and studied regarding their botanical names followed by their local name, family, flowering period, voucher specimen number, part used and ethnomedicinal uses. All voucher specimens were deposited in the Botany Department of University of Arid Agriculture Rawalpindi for future references.

Results and Discussion

1. *Dryopteris ramosa* L.

Local Name	=	Pakha
Family	=	Aspidiaceae
Flowering Period	=	December-March
Voucher specimen No	=	49
Part used	=	Young leaves.
Ethnomedicinal uses	=	Young leaves are collected in March-May and used as vegetable against gastric ulcer, constipation and aphrodisiac.

2. *Ficus glumerata* Wall. Ex Roxb.

Local Name	=	Phagwar
Family	=	Moraceae
Flowering Period	=	September-October
Voucher specimen No	=	50
Part used	=	Fruits and leaves.
Ethnomedicinal uses	=	Fruits are eaten against constipation and are also used against lugs and urinary problems.

3. *Mentha royleana* L.

Local Name = Podina
Family = Lamiaceae
Flowering Period = August-September
Voucher specimen No = 51
Part used = Aerial parts.
Ethnomedicinal uses = Aerial parts are dried under sunlight and are ground to obtain powder, which is mixed with powder seeds of *Carum copticum* and is used to stop vomiting. Decoction of the leaves is used against cough, flu and diarrhea.

4. *Berberis lycium* Royle

Local Name = Simblu
Family = berberidaceae
Flowering Period = April -June
Voucher specimen No. = 35
Part used = Bark, branches and roots.
Ethnomedicinal uses = The extract from roots and the stem is used against blood purification and stomach problems. The bark of the stem is used against fever and diabetes.

5. *Quercus leucotrichophora* A. Camus

Local Name = Rein, Shah baloot
Family = Fagaceae
Flowering Period = July-October
Voucher specimen No. = 53
Part used = Fruits and wood.
Ethnomedicinal uses = Fruits are used as diuretic and also used against diarrhea, indigestion, asthma and gonorrhoea.

6. *Rumex hastatus* D. Don

Local Name = Khatimmer
Family = Polygonaceae
Flowering Period = July-September
Voucher specimen No. = 54
Part used = Roots and leaves.

Ethnomedicinal uses = Roots are dried, boiled in water and decoction is used against jaundice. Fresh leaves are recommended by the local people as the ethnophytotherapeutic treatment against stinging nettle (*Urtica dioica*).

7. *Trichodesma indica* (L.) R. Br

Local Name = Hundusi
Family = Boraginaceae
Flowering Period = April-August
Voucher specimen No = 55
Part used = Whole plant.
Ethnomedicinal uses = Extract of the whole plant is mixed with sugar and used against diarrhea, dysentery and urinary problem.

8. *Zanthoxylum alatum* Roxb.

Local Name = Timmer
Family = Rutaceae
Flowering Period = September-November
Voucher specimen No = 56
Part used = Fruits, seeds and branches.
Ethnomedicinal uses = Fruit is used against dyspepsia, as a carminative and stomachache. Branches are used as miswak (toothbrush).

9. *Sauromatum Venosum* (Ait.) Schott

Local Name = Samp the boti
Family = Araceae
Flowering Period = September-October
Voucher specimen No = 57
Part used = Rhizome.
Ethnomedicinal uses = Rhizome is used as stimulating poultice in snakebite.

10. *Hedera nepalensis* K. Koch

Local Name = Harbanbal
Family = Araliaceae
Flowering Period = April-June
Voucher specimen No = 58
Part used = Leaves and fruits.
Ethnomedicinal uses = The dry leaf powder is used as stimulate sores,
diaphoretic cathartic, contains arsenic oxide besides tannin. Fruits (Berries) are purgative,
useful in febrile disorders. .

11. *Lactuca serriola* L.

Local Name = Kahu
Family = Asteraceae
Flowering Period = August-September
Voucher specimen No = 59
Part used = Whole plant.
Ethnomedicinal uses = The herb is used as cooling, sedative, diaphoretic,
diuretic, antiseptic, hypnotic, expectorant, useful in the treatment of coughs in phthisis,
bronchitis, asthma and pertussis.

12. *Tagetes minuta* L.

Local Name = Hameshgul
Family = Asteraceae
Flowering Period = February-April
Voucher specimen No = 60
Part used = Flowers and leaves.
Ethnomedicinal uses = Flowers and leaves are used for vomiting and
digestive disorders.

13. *Viburnum cotinifolium* D. Don.

Local Name	=	Chamakath
Family	=	Capparidaceae
Flowering Period	=	September-October
Voucher specimen No	=	61
Part used	=	Flowers, Bark.
Ethnomedicinal uses	=	The bark is given in menorrhagia and metrorrhagia. Flowers are used in blood purification.

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

Local Name	=	Kamla
Family	=	Euphorbiaceae
Flowering Period	=	June-August
Voucher specimen No	=	62
Part used	=	Leaves, fruits, bark.
Ethnomedicinal uses	=	The powder of fruits is used as vermifuge, purgative and in certain skin diseases. The leaves and barks are used for poulticing in cutaneous diseases. The powder is also used as dye.

14. *Colebrookia oppositifolia* Smith.

Local Name	=	Pathan
Family	=	Lamiaceae
Flowering Period	=	July-September
Voucher specimen No	=	63
Part used	=	Leaves, roots.
Ethnomedicinal uses	=	Leaves are applied to wounds and for ulcers as antiseptic. Roots extract is used in epilepsy and it contains flavones.

15. *Ficus virgata* L.

Local Name	=	Phagwara
Family	=	Moraceae
Flowering Period	=	April-June
Voucher specimen No	=	64
Part used	=	Fruits, latex, leaves, wood.
Ethnomedicinal uses	=	The fruit is laxative and demulcent and used as diet in constipation and in lungs and bladder diseases. Leaves are boiled in the milk of goat used to soften the arteries.

16. *Myrsine africana* L.

Local Name	=	Khukhal
Family	=	Myrsinaceae
Flowering Period	=	March-June
Voucher specimen No	=	65
Part used	=	Leaves, shoots, fruits.
Ethnomedicinal uses	=	Plant is used as hedge having edible fruits. Warm gum is used in dysmenorrhoea. Leaves extract as blood purifier. Fruits are antiseptic, used in the preparation of skin ointments, laxative, in dropsy and colic pains. Shoots serve as fodder for goat. It is used as fuel.

17. *Jasminum humile* L.

Local Name	=	Pili Chambaili
Family	=	Oleaceae
Flowering Period	=	February-April
Voucher specimen No	=	66
Part used	=	Flowers, roots.
Ethnomedicinal uses	=	Flowers are astringent. Decoction of roots is used in ringworm. Flowers are mixed with green tea for its pleasant smell. It yields essential oil. It is used for ornamental and as hedge plant. It is important for apiculture.

18. *Pinus roxburghii* Sargent

Local Name	=	Chil, Chir
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Family	=	Pinaceae
Flowering Period	=	March-June
Voucher specimen No	=	67
Part used	=	Wood, resin, leaves (needle).
Ethnomedicinal uses	=	Wood is used to cool the burning sensation of the body. Resin is employed as a stimulating application for ulcer and abscesses and as basis for plaster. Past is used for painful chest. Wood and resin used in snakebite and scorpion sting. tannin and to control erosion. Leaves (needles) are used for thatching. It is also used as ornamental.

20. *Cymbopogon Jawarancusa* (Jones) Schult.

Local Name	=	Khawi
Family	=	Poaceae
Flowering Period	=	June-July
Voucher specimen No	=	68
Part used	=	Whole plant.
Ethnomedicinal uses	=	Leaves are used to purify blood, given in coughs, chronic rheumatism, and tonic in dyspepsia, stimulant, sudorific in gout and fevers.

21. *Zea mays* L.

Local Name	=	makki
Family	=	Poaceae
Flowering Period	=	July-August
Voucher specimen No	=	69
Part used	=	Whole plant.
Ethnomedicinal uses	=	Staminal hair are boiled in water and this decoction is extensively used for kidney and urinary problems. extracted, used in Ghee industry. Remnants of cobs are also used as fuel.

22. *Dryopteris pallida* Fomin

Local Name	=	Unknown
Family	=	Pteridaceae

Flowering Period = December-March
Voucher specimen No = 70
Part used = Whole plant.
Ethnomedicinal uses = Extract obtained from the aerial parts and is mixed with water and used for chronic dysentery.

23. *Pyrus communis* L.

Local Name = Nashpati
Family = Rosaceae
Flowering Period = March-April
Voucher specimen No = 71
Part used = Fruits, wood.
Ethnomedicinal uses = Fruit is edible and is used for digestive disorders and is recommended for general debility.

24. *Pyrus pashia* Buch. Ham. ex D. Don

Local Name = Batangi
Family = Rosaceae
Flowering Period = April-August
Voucher specimen No = 72
Part used = Leaves, fruits, roots, wood.
Ethnomedicinal uses = Fruit is used as febrifuge, sedative and astringent.

25. *Ailanthus altissima* Swingle

Local Name = Backyanra, Ailanthus
Family = Simaroubaceae
Flowering Period = April-July
Voucher specimen No = 73
Part used = Leaves, trunk and bark.
Ethnomedicinal uses = Leaves are crushed and are recommended for

stomach disorders of the cattles mill pulley. It is used as fuel wood. It is considered as an invader species. Bark is also important for tannin, thatching and to control soil erosion.

26. *Lantana camara* L.

Local Name	=	Punchphuli
Family	=	Verbinaceae
Flowering Period	=	December-March
Voucher specimen No	=	74
Part used	=	Whole plant.
Ethnomedicinal uses	=	It is poisonous plant.

27. *Vitex negundo* Hausskn.

Local Name	=	Marwan
Family	=	Verbinaceae
Flowering Period	=	April-June
Voucher specimen No	=	75
Part used	=	Leaves, roots, branches.
Ethnomedicinal uses	=	Leaves are crushed and mixed with wheat flour and used on skin disorder. Leaves are smoked to relieved headache. Branches are used as toothbrush. It is anthelmintic and diuretic. Roots are used to relieve backache.

28. *Picea smithiana* (Wall.) Boiss.

Local Name	=	Kachal, Rau
Family	=	Pinaceae
Flowering Period	=	April
Voucher specimen No	=	76
Part used	=	Wood.

29. *Cedrus deodara* Roxb. ex. D. Don

Local Name	=	Deodara, Dewar
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Family	=	Pinaceae
Flowering Period	=	October-November
Voucher specimen No	=	77
Part used	=	Bark and wood
Ethnomedicinal uses	=	wood is used for piles, pulmonary and urinary disorders. Bark is used for diarrhea, fever and skin diseases.

30. *Viola serpens* Wall.ex.Roxb

Local Name	=	Binafsha
Family	=	Violaceae
Part use	=	Aerial parts
Flowering periods	=	November-December
Voucherspecimen no.	=	11
Ethnomedicinall uses	=	Flower are dried under shad and ground to makepowder which is recommended by local people for liver diseases,cold and cough.Decoction of the flower is used against jaundice and stomach diseases.

Nearly 80% of the world population depend upon traditional system of health care. Allopathic drugs have brought a revolution throughout the world, but the plant base medicines have its own status. The local uses of plants as a cure are common particularly in those areas, which have little or no assess to modern health services (Saeed *et al.*, 2004). Hence due to less communication means, poverty, ignorance and unavailability of modern health facilities, most people especially rural people still forced to practice traditional medicines for their common day ailments. Most of these people form the poorest link in the trade of medicinal plants (Khan, 2002). Nowadays younger generation is using alternative modern medicines for their treatment and also forgetting about indigenous knowledge of medicinal plants. But most of the people especially old people, herbalists and old ladies still possess the traditional knowledge about wild surrounding resources.

The necessity for exploitation of indigenous drugs has long been felt with the increasing need of drugs and medicines. It is desired that indigenous plant material should be collected, identified, processed and utilized for the medicinal purposes. A preliminary survey of medico-botanical investigation is the first logical step in direction towards the ultimate role of the development of natural drug industry. Every year a considerable amount of foreign exchange is involve in the import of the drugs of foreign origin. The utilization of drug resources will increase the importance of the local industry on the one hand and will minimize the expenditure incurred on the purchase of foreign drugs on the other. There is a need for urgent preferential probe of plant resources because with rapid urbanization of forest and hills, the rich herbal wealth of our country is fast dwindling.

In view of economic importance and constant demand of medicinal herbs in galliyat areas it is desirable to obtain the

traditional knowledge of medico-botanical investigations from local inhabitants of these areas. The local inhabitants and local practitioners in area through traditional knowledge collect the medicinal plants and use for common day ailments. The medico-botanical investigations about-30 plant species belonging to 28 genera of 21 families were reported. The fruits, seeds and branches of *Zanthoxylum alatum* (Timmer) were used for dyspepsia, stomach ache and teeth ache. Similarly leaves fruits and bark of *Mellotus philipensis* (Kamla) was used for skin diseases. Leaves, roots and branches of *Vitex negundo* (Marwan) were used for skin diseases, headache, toothache and backache. It has been reported that large number of medicinal plants occur scattered over the entire forest areas but all the species are however not procures for commercial purposes. In view of the economic importance of these medicinal plants, research and development efforts should be focused on these plants. It is proposed to establish comprehensive research projects to boost up the production of medicinal plants of this area.

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