

A Study on Folk Medicine and Medicinal Plant Diversity in Kawal Wildlife Sanctuary

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Abstract

The present study documents the ethnobotanical knowledge and traditional use of medicinal plants by tribal communities inhabiting the Kawal Wildlife Sanctuary in Adilabad District, Telangana. Extensive field surveys were conducted during 2018–2021 to collect first-hand information from local herbal healers, village elders, and indigenous people such as Gonds, Kolams, and Thotis. The collected data were validated with standard ethnobotanical literature. A total of 26 plant species belonging to different families were recorded and analyzed for their therapeutic uses. The study revealed that various plant parts, including roots, leaves, stem bark, fruits, and seeds, are widely utilized in the preparation of crude drugs. These herbal remedies are used to treat a range of ailments such as leucorrhoea, jaundice, snake bites, scorpion stings, skin diseases, rheumatism, and digestive disorders. The methods of preparation include decoctions, pastes, infusions, and juices, administered both orally and externally. Among the plant parts, roots and leaves were found to be the most frequently used. The findings highlight the rich traditional knowledge of tribal communities and their dependence on forest resources for primary healthcare. However, this valuable indigenous knowledge is gradually declining due to environmental degradation and socio-cultural changes.

Key words: Folk medicine, Kawal wild -life sanctuary Telangana

Introduction

Kawal wild –life sanctuary is one of the biggest tiger reserves areas in India. It is situated in the central Nallamalais, an off-shoot of Telangana. It is located on the with an area of 1194 sqkm spreading in Adilabad districts. It is Geographically, the region is the study area, Kawal Wildlife Sanctuary, is geographically located at approximately 19°07'08" N latitude and 78°59'56" E longitude. The soils are black cotton type. Godavari river is the main water source in the sanctuary. The annual average rain fall is 986mm. The maximum temperature 35⁰C in summer and 10⁰C In winter at higher elevations. The vegetation is represented by sub tropical ., deciduous and moist mixed deciduous forests (Champion and Seth 19680. Gond , kolan and tothi are the common adivasis in the area, possessing sound knowledge on different crude drugs used for their ailments. The area has received good attention from taxonomists due to the presence of rich and diversified plant wealth (ref Prasad, K. & Raju, B. (2010)). However, very few and sporadic attempts were made to conduct ethnobotanical studies (ref H. G. Champion & S. K. Seth (1968)).

Kawal tiger Reserve is a nature Preserve located in Jannaram mandal of Mancherial District in the Telangana State of India. Previously, the area was the part of the Adilabad District. The Government of India declared Kawal Wild Life Sanctuary to be tiger reserve in 2012. It was

established 1999. Area 2015 km². Common wild animals are Tigers, Leopards, Gaur (Indian Bison), Sloth Bears, Sambar, Cheetal, Nilgai, Chousingha and black buck, along side predators like wolves, Jackals and wild dogs. Reptiles (python, crocodales) and numerous bird species thriving its Southern Tropical dry deciduous forests with distinct dry teak and mixed deciduous series, feathering dense bamboo along the Godavari river.

Material and Methods

Ethnobotanical surveys were conducted in the forests of Kawal wild-life sanctuary for recording first hand information regarding the therapeutic properties of wild plants in the area. In the present study the collected information was cross checked with the help of available literature (Jain, 1987,1991, Lewis 1977). Individual plant species of medicinal properties were recorded, after making a special observation on the habit, habitat, frequency of occurrence, association, colour and scent of flowers and other relevant characters, which cannot be observed from dried herbarium sheets. Detailed information regarding vernacular names, parts used, diseases, mode of preparation recorded in field note books .

Results and Discussion

The present study was investigated by the several field trips was conducted in Kawal wild life sanctuary during three years 2017 to 2020 .To collect folklore information regarding medicinal plants from traditional herbal healers and village heads, etc. The roots of *Andrographis nallamalayana* are used for leucorrhoea, while the stem bark of is given orally for snake bite Piper betel mixed with turmeric and gingely oil/ coconut oil is used externally for mouth ulcers. Leaves of The observations revealed that the tribes used whole plant, root, stem bark, leaf flower fruit and seeds are commonly used. These plant parts are the common crude drug in their preparations to cure different diseases. Intensive surveys and repeated interviews with experienced herbal practitioners in the area revealed 16 diseases as common and predominant ailments. Of these , jaundice, leucorrhoea, snake bite, scorpion sting, menorrhoea, skin diseases and rheumatism are considered to be most common. The popular predominantly used crude drugs in the area are being biologically analysed in the laboratory to understand the molecular basis for their therapeutic properties.

Family, Scientific name, Vernacular name, Part used Disease ,Mode of Preparation

Acanthaceae , *Andrographis nallamalayana* Ellis, 'Kachugadda' Root, Leucorrhoea Root along with turmeric (Zingiberaceae, *Curcuma longa* L. , 'Pasupu' ground and boiled , decoction given orally from for five days.

Apocynaceae *Holostemma ada-kodein* Schult. 'Dudipalateega' Leaf **Galactagogue** Fresh leaf mixed with garlic, (Liliaceae, *Alium sativum* L., 'Vellulli') ground and paste given orally daily two times.

Asclepiadaceae *Pergularia daemia* (forsk.) Choiv. 'Juttapaku' **Scorpion bite** Fresh leaves macerated in water 5-6 drops, filtered extract dropped in the opposite ear to the bitten area for one time daily.

Caesalpiniaceae *Bauhinia racemosa* Lam. 'Are chettu' **Spermatorrhoea** Fresh stem bark ground boiled decoction mixed with Apiaceae, *Carum copticum*, 'Vaamu' given orally before bed time for a week.

Celastraceae, *Maytenus emarginata* (Willd.) Ding, 'Danti' **Fertility in Women** Leaves chewed in early mornings for thirty days.

Convolvulaceae, *Rivea hypocrateriformis* (Desr.) Choisy. 'Boddi teega'. **Purgative**. Root crushed and boiled in milk, decoction given orally.

Dioscoreaceae, *Dioscorea oppositifolia* L. 'Paralagadalu' **Scorpion bite**. Root ground, made into paste and applied on bitten area.

Ebenaceae, *Diospyros ovalifolia* L., 'Tuniki chettu'. **Burning wounds**. Stem bark ground infusion mixed with coconut oil (Poaceae, *Cocos nucifera* L, 'Kobbari chettu') applied externally.

Lamiaceae, *Premna tomentosa* Willd. 'Kampugummadi' **Postpartum remedy**. Fresh leaf made into paste boiled with water. decoction is used as a remedy for easy delivery.

Loganiaceae *Strychnos nux-vomica* 'Musti' **Bloodpressure**. Infusion mixed with honey and made into pills. Two pills given per day after dinner for a week.

Malvaceae, *Helicteres isora* L. 'Nulithada' **Urinary pain**. Root mixed with root of Menispermaceae, *Cocculus hirsutus* (L.) Diels, 'Chepuru teega') ground into juice given orally.

Moraceae, *Ficus mollis* Vahl 'Juvvi chettu' **Ear-ache**. Leaves mixed with mahua (Sapotaceae, *Madhuca latifolia*, 'Ippa chettu') boiled. Decoction dropped as ear drops.

Piperaceae, *Piper hymenophyllum* Miq. 'Adavithamalapaku' **Indigestion**. Root along with Omami (Apiaceae, *Trachyspermum ammi*, 'Vaamu') ground in cow milk, paste given orally and take daily.

Sapindaceae, *Sapindus emarginatus* Vahl 'Kunkudu' **Sinusitis**. Fruits along with thummi (Lamiaceae, *Lucas aspera* L 'Thummi') leaves and garlic (Liliaceae, *Allium sativum* L., 'Vellulli'), juice dropped into nose before sunrise.

Solanaceae *Datura innoxia* Mill. 'Nalla Ummetta' **Dog bite, Insect bite**. Fresh leaf juice mixed with jiggery (Boraginaceae *Borassus fabellifer* L. 'Thati chettu') Borassus and given orally. Leaf juice applied on bitten area. o

Rubiaceae *Haldinia cordifolia* (Roxb.) Ridsd. 'Rudra ganapa' **Leucorrhoea** Stem bark mixed with gum karaya roasted seeds (Malvaceae, *Sterculia urens*, 'Tapasi chettu') ground boiled with Pepper (Piperaceae, *Piper nigrum*, 'Miriyalu') decoction given orally.

Euphorbiaceae, *Givotia rottleriformis* Griff, 'Poliki' **Psoriasis**. Seeds made into powder, mixed with Seed oil (Fabaceae, *Pongamia pinnata*, 'ganuga chettu') and made into paste, applied externally as an ointment.

Acanthaceae, Zingiberaceae, Apocynaceae, Liliaceae 2, Asclepiadaceae, Caesalpiniaceae Apiaceae 2, Celastraceae, Convolvulaceae, Dioscoreaceae, Ebenaceae, Poaceae, Lamiaceae

2, Loganiaceae, Malvaceae 2, Menispermaceae, Moraceae, Sapotaceae, Piperaceae 2, Sapindaceae, Solanaceae, Boraginaceae, Rubiaceae, Euphorbiaceae, Fabaceae.

Andrographis nallamalayana Ellis, *Curcuma longa* L., *Holostemma ada-kodein* Schult. *Alium sativum* L., *Pergularia daemia* (forsk.) Choiv., *Bauhinia racemose* Lam, *Carum copticum*, *Maytenus emarginata* (Willd.) Ding, *Rivea hypocrateriformis* (Desr.) Choisy, *Dioscorea oppositifolia* L., *Diospyros ovalifolia* L, *Cocas nucifera* L., *Premna tomentosa* Willd, *Strynos nux – vomica*, *Helicteres isora* L, *Cocculus hirsutus* (L.) Diels, *Ficus mollis* Vahl, *Madhuca latifolia*, *Piper hymenophyllum* Miq, *Trachyspermum ammi*, *Sapindus emarginatus* Vahl, *Lucas aspera* L, *Allium sativum* L., *Datura innoxia* Mill, *Borassus fabellifer* L., *Haldinia cordifolia* (Roxb.) Ridsd., *Sterculia urens*, *Piper nigrum*, *Givotia rottleriformis* Griff, *Pongamia pinnata*,

Plants are commonly used for Leucorrhoea, Galactagogue, Scorpion bite, Spermatorrhoea, Fertility in Women, Purgative, Scorpion bite, Burning wounds, Postpartum remedy, Bloodpressure, Urinary pain, Ear-ache, Indigestion, Sinusites, Dog bite, Insect bite, Psoriasis. Plant parts are root rhizome, tuber, root bark, stem, leaf, fruit, seeds. Plant habitats are climbers, herbs, shrub, medium tree, big tree. Total families are 25, total plant species 26. Commonly used for common diseases.

Review of Literature

Ethnobotany plays a vital role in documenting traditional knowledge of medicinal plants used by indigenous communities. In India, pioneering work by S. K. Jain (1991) laid the foundation for systematic ethnobotanical studies, emphasizing the importance of recording folk medicinal practices before they disappear. Several studies have reported the rich ethnomedicinal heritage of tribal communities across India. K. R. Kirtikar and B. D. Basu documented a large number of medicinal plants and their uses in their classical work *Indian Medicinal Plants*. Similarly, P. C. Trivedi (2002) highlighted the significance of ethnobotanical knowledge in drug discovery and conservation.

In South India, particularly in Telangana and the erstwhile Andhra Pradesh region, several ethnobotanical surveys have been conducted among tribal groups such as Gonds, Kolams, and Naikpods. Studies by Reddy et al. (2007) reported the use of various medicinal plants in Adilabad district for treating ailments like fever, skin diseases, and snake bites. These findings indicate a strong dependence of tribal communities on forest resources for primary healthcare. The classification of Indian forest vegetation by H. G. Champion and S. K. Seth (1968) provides a scientific basis for understanding plant distribution in regions like the Kawal Wildlife Sanctuary, which is dominated by tropical dry deciduous forests rich in medicinal flora. Despite the rich biodiversity of Kawal Tiger Reserve, only limited ethnobotanical studies have been conducted in this region. Most available literature focuses on floristic diversity rather than traditional medicinal knowledge. Therefore, the present study attempts to fill this gap by documenting the therapeutic uses of plants by tribal communities inhabiting the sanctuary.

Conclusion

The present study highlights the rich ethnomedicinal knowledge of tribal communities residing in the Kawal Wildlife Sanctuary. A total of 26 plant species belonging to different families

were documented for their medicinal uses in treating various ailments such as leucorrhoea, jaundice, snake bites, scorpion stings, skin diseases, and rheumatism.

The study reveals that different plant parts such as roots, leaves, stem bark, fruits, and seeds are widely used in the preparation of crude drugs. Among these, roots and leaves were found to be the most frequently utilized. The methods of preparation include decoctions, pastes, infusions, and juices, administered either orally or externally.

Traditional knowledge of herbal medicine among tribes such as Gonds, Kolams, and Thotis is invaluable and has been passed down through generations. However, this knowledge is rapidly declining due to modernization, deforestation, and lack of documentation. Document and preserve this indigenous knowledge. Promote conservation of medicinal plant species. Encourage phytochemical and pharmacological studies to validate traditional claims. The findings of this study may serve as a basis for future research in drug development and biodiversity conservation.

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