International Journal of Botany Studies
www.botanyjournals.com
ISSN: 2455-541X
Received: 03-09-2024, Accepted: 04-10-2024, Published: 19-10-2024
Volume 9, Issue 10, 2024, Page No. 44-47

Ethnomedicinal plants utilized in tribal healthcare systems in Bhadradri Kothagudem, Telangana

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Abstract
The indigenous populations rely on trees for their sustenance, while the majority of rural communities continue to utilize traditional medicine as their primary healthcare resource. The report emphasizes the abundant plant resources and the extensive ethnobotanical knowledge possessed by the many tribes in the region. This research reports novel and lesser-known ethnomedicinal applications of 28 plant species utilized by tribes in Bhadradri Kothagudem for various diseases. The primary aim of this effort is to provide knowledge and documentation regarding medicinal plants utilized by the indigenous population of the studied area. Ethnomedicinal data was obtained through interviews with senior members of the Koya, Chunchu, Erukala, and Kondareddy tribes in the study area. The research on ethnomedicinal plants utilized in the healthcare systems of tribes in four villages—Tippapuram, Bathinapalli, Unjupalli, and Chalamala—was conducted in Bhadradri Kothagudem.

Keywords: Ethno botany, livelihood, tribe, documentation & healthcare

Introduction
India's medicinal plants and tribal and folk knowledge systems are diverse and across numerous regions. Botanical therapeutic herbs are important to human civilisation (Lewis WH, 2003) [8]. Tribal people subsist on woodlands, while up to 70% of rural populations use traditional medicine for treatment. India has over 550 tribal clans from 227 ethnic groups living in 5000 villages with various woods and agriculture. Plant-based medicines are used by 25% of indigenous people in rural parts of several developed countries (Principe P., 2005) [10]. Forests cover 56,448 sq. km more than 44% of the states' total area. The total forest area is 67.10% dense and 32.89% open (Kala C.P., 2006 and Brij L., 1993) [3,7]. Botanically derived medicinal plants have been important in human societies throughout history and prehistory (Lewis W.H. and Elwin Lewis M.P., 2003) [8]; however, as modern civilisation grows, allopathic drug use is increasing and herbal drug use is limited to select communities or areas. Unani physicians use ferns (Uddin M.G., Mirza M.M., and Pasha M.K., 1998) [14]; ethnobotanical applications of this group are important. Traditional plant-based knowledge is being used to find new medications, wound healing agents, and nutraceuticals (Tirkey A., 2004 & Kala C.P., 2005) [6, 13]. Due to its rich traditional medicinal system and diverse plant use, India is one of the eight primary centres of domesticated taxa genesis and diversification in the world (Siva R., 2007) [12]. The current project documents Bhadradri Kothagudem tribes' medicinal herbs.

Materials and methods
Study sites
The current study examined the use of phototherapeutic medicines in the healthcare systems of tribal communities in various regions of Bhadradri Kothagudem, including Tippapuram, Bathinapalli, Unjupalli, and Chalamala.

Vegetation and climate
This area is a biodiversity zone and a haven for those interested in medicinal plants, primarily consisting of tropical forests. Due to the diverse topography, a significant portion of the forest remains uncharted, and it is quite likely that this region harbors numerous unrecorded species. The extensive woods of T.G. are home to numerous valuable medicinal plants. The higher ridge features thick vegetation, while the banks of the nala are characterized by abundant development of semi-evergreen tree species, shrubs, and herbs. Due to its physiographic characteristics and the resulting microclimatic factors and vegetation correlations, the region is endowed with a rich and diversified medicinal flora. Temperature fluctuates between 290°C and 450°C in summer and between 120°C and 250°C in winter.

Tribal community
Interviews with surviving elders from the Koya, Chunchu, Erukala, and Kondareddy tribes of the research area, as well as data collected from published and unpublished sources from both the past and the present, demonstrate the persistence of ethnobotanical knowledge.

Data collection
The ethnobotanical studies conducted in the study area are highly significant, as they demonstrate the dominance of various tribal communities, including Koya, Chunchu, Erukala, and Kondareddy.

1. Interview
Data collection was conducted via semi-structured interviews employing open-ended questions directed at three informants, encompassing plant features, dosage, utilized components, processing methods, and the philosophical principles inherent in the application of medicinal plants.

Observation
Plants utilized for the treatment of specific ailments are documented with local names, scientific nomenclature, therapeutic applications, types of diseases addressed, utilized parts, methods of administration, dose recommendations, timing for consumption, sources of procurement, and philosophical interpretations of traditional medicine.

Plant identification
For the purpose of identification, for instance, plant species that have not been given scientific names are taken into consideration.

Results

An ethnomedicinal and ethnobotanical survey found 28 plants in 21 families, including Amaranthaceae, Fabaceae, and Rutaceae. In Bhadradri Kothagudem, ethnobotanical data and research were collected and organised into a database for study. The herbs are used to treat skin issues, diarrhoea, jaundice, cough, wounds, haemorrhoids, and snake bites as antiseptics and antidotes. Leaves account for 28% of medicinal plant use, followed by roots (21%), seeds (14%), fruits (19%), and bark (11%). Juice, powder, and paste from newly gathered plants are the most common treatments. Medical administrations include inhalation, oral, topical, and massage. Most dermatological problems and wounds are treated topically, however stomachache, haemorrhoids, jaundice, and diarrhoea can be treated orally. Leaves are used mainly in therapeutic preparations for various ailments, followed by roots. Gathering subsurface plant parts and whole plants affects ecological balance and species viability (Table 1).

Discussion

The scientific names, local names, components, preparation methods, and ethnomedical uses of botanical species were presented (Verma, P., Khan, A.A., and Singh, K.K., 1995) [11, 15]. Locals are utilising therapeutic herbs without understanding their ecological value (Annamalai, R., 2004) [1]. Traditional knowledge of ethnic communities helps identify natural resources quickly and accurately, demonstrating ethnobotany's scope (Jain S.K., 1995) [5]. Biswas and Mukharjee (2003) [2] found that 70% of Ayurvedic wound-healing treatments are plant-based, 20% mineral, and 10% animal. In 2010 [9], Parihar P., Parihar L., and Bohra A. stated that ethnomedicine uses underutilised pteridophytic plants' antibacterial capabilities but little research on their antimicrobial qualities. Scientific names, local names, components, preparation methods, and ethnomedical uses of botanical species were presented (Verma P., Khan A.A., and Singh K.K., 1995) [11, 15].

Conclusion

The examination found various medicinal plants in the research region that can treat many human diseases. Previous research on traditional medicinal flora found that economically disadvantaged local and tribal inhabitants in Bhadradri Kothagudem prefer folk medicine since it is affordable and part of their culture. According to interviews in numerous villages, only traditional healers, herbalists, and elderly rural residents know medicinal plants. This study found that many people in Bhadradri Kothagudem use medicinal plants to treat colds, coughs, fevers, headaches, poison bites, skin disorders, and dental infections, even though medical treatment is available for both simple and complex illnesses. Effective patient engagement by knowledgeable healers improves healthcare delivery. The disinterest of younger generations and their tendency to go to cities for work may lead to the loss of this vital expertise. Thus, precise recordkeeping and species identification are necessary to preserve this old medical syst.

Table 1: List of Ethnobotanical Plants

Sl. No.	Scienctific Name	Vernacular Name	Family	Treating Disease	Part Used	Dosage and Preparation
1	*Andrographus paniculata*	Nelavemu	Acanthaceae	Malaria fever	leaves	Andrographis, together with a paste of pepper and garlic, is prepared and utilised.
2	*Adhatoda vasica*	Adusa	Acanthaceae.	Cough and Cold	Leaves	Ten to fifteen fresh *Adhatoda vasica* leaves are crushed and mixed with honey in a bottle. Two teaspoons of extract are taken in the morning and evening for five to six days.50 *Adhatoda vasica* leaves are cooked in one litre of water until reduced to one glass, then half a glass of cow ghee is added. For complete cold and cough treatment, one teaspoon of the mixture is used monthly. Water-soluble powder.
3	*Acorus calamus*	vasa	Acoraceae	Eczema	Root	Equal parts bach root and Giloy stem are sun-dried. Pestle and mortar make fine powder. For relief, take half a teaspoon of the powder dissolved in hot water in the morning and evening for three days.
4	*Gomphrena serrata*	Chiru nallintha	Amaranthaceae	Gonnorhea	Roots	The roots are ground and strained. The juice is administered using cotton.
5	*Amaranthus virdis*	Chilaka totakura	Amaranthaceae	Eye problems	Leaves	Cotton mesh passes crushed plant leaves. For 5-10 days, two drops of the extract are administered to the eye before bed to treat eye disorders and prevent blindness. Sometimes before bed, Amaranthus viridis leaf paste is applied to the eyes.
6	*Calotropis procera*	Aak	Asclepiad aceae	Leprosy, dropsy & rheumatic pain.		Abrasions and cuts are treated with root paste. Leprosy, edoema, and rheumatic pain are treated with milky juice. Sugar and leaf ash heal asthma and bronchitis.
7	*Asparagus racemosus*	Shatavari	Asparagaceae	Joint Pain	Roots	Shatavari roots were collected from the jungle and cleaned with hot water. The core of the root is cut and diced. One portion of chopped root is boiled with three portions of water till half the volume is decreased by half. Jaggery or sugar is added to taste and 2-3 teaspoons are eaten with milk for 15-16 days.
8	*Aloe vera*	kalabanda	Asphodelaceae	Cuts & wounds	Pulp	Crush 25–30 fresh *Ocimum sanctum* (Tulsi) leaves and preserve the extract. For full recovery, use one teaspoon of extract and one teaspoon of honey twice daily for 3–5 days..
9	*Raphanus sativus / Cuscuta reflexa*		Brassicaceae / Convolvulaceae	Jaundice	Leaves	*Raphanus sativus* (Muli) leaves are mashed with an equal amount of Cuscuta reflexa in a mortar and pestle and bottled. To treat jaundice, take one teaspoon of extract with a pinch of sugar twice a day for seven days.

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10	*Anogeissuss latifolia*	Sirimanu	Combretaceae	Diabetes	Bark	Water is used to wash the plant's fresh bark and seeds in equal amounts. Both are pastel and mortal-pulverized with water and filtered through cotton mesh. Filtered after 15 minutes of low heating. Add two tablespoons of black salt to a clean bottle and keep for two days. It treats diabetes after two days. Two tablespoons of this formulation twice a day with one cup of cold water before meals will provide relief for 15 days.
11	*Terminalia arjuna*	Naramamidi chekka	Combretaceae	Sprains	Bark	Latex is extracted, processed into juice, and utilised for a duration of 15 days.
12	*Diospyros ontana*	Tendu	Ebenaceae	Body ache	Root bark	The root bark and fruit of the Bistendu are sun-dried, ground into a fine powder, and taken with salt twice daily after meals for a duration of 3-4 days. Curd should be avoided during this therapy period.
13	*Euphorbia hirta*	Reddyvari nanubalu	Euphorbiaceae	Milk secretion	Whole plant	The entire Dudhi plant is washed with fresh water, and the extract is combined in equal proportions with fresh milk and honey. This formulation is administered to the woman once daily before bedtime for 5-6 days to enhance milk supply.
14	*Acalypa indica*	Kuppi	Euphorbiaceae	Snake bite	Leaf/ Whole plan	Leaf paste applied to the bitten area or paste spread on the bite site (3–4 days)
15	*Phillanthus amarus*	Nela oosari	Euphorbiaceae	Diabetes	Leaves	Nelaoosari, pepper, and gymnema sylvestre are pulverised and consumed with honey.
16	*Crotolaria verrucosa*	Thella eswari	Fabaceae	Snake bite	Leaves	Leaves are processed into a paste and applied on wounds.
17	*Ocimum sanctum*	Tulsi	Lamiaceae	Cold	Leaves	Crush 20–30 fresh *Ocimum sanctum* (Tulsi) leaves and preserve the extract. For full recovery, use one teaspoon of extract and one teaspoon of honey twice daily for 3–5 days.
18	*Strychnus nuxvomica*	Visha moosti	Loganiaceae	Ringworm	Seeds	The seeds are ground into a powder and consumed.
19	*Helicteres isora*	Vadambari	Malvaceae	Dysentery	Seeds	Rasna jadi roots from the forest are cleaned with hot water and mashed in a pestle and mortar to make a paste. One half scoop of paste is mixed with one cup of hot water and taken twice a day for two days.
20	*Abutilonon indicum*	Tuturu benda	Malvaceae	Cuts & wounds	Roots/ Leaves	*Abuliton indicum* roots are burned and mixed with powdered Macuna pruriens leaves, coconut oil, and camphor in a clean vessel to make a paste. To treat cuts and wounds, this paste is used three times a day for five to six days.
21	*Abtilon indicum*	Thuthuru benda	Malvaceae	Menstrual problems	Roots	Roots are desiccated and utilised till healing occurs.
22	*Ficus glomerata*	Atti	Moraceae	Diabetes	Fruit & bark	Drying fresh *Ficus glomerata* (Dumar) fruit and bark produces powder. For 15 days, take one tea spoon of powder with half a cup of cold water in the morning on an empty stomach.
23	*Boerhaavia diffusa*	Pathribhaji	Nyctaginaceae	Kidney Stone	Leaves	To dissolve stones, Boerhavia diffusa leaf extract is taken on an empty stomach in the morning and followed by 1-2 glasses of fresh water after one hour. The treatment lasts 15 days. Complete kidney stone disintegration.
24	*Phyllanthus niruri*	Nela usiri	Phyllanthaceae	Dysentery	Whole plant	The whole plant is ground in a mortar and pestle and filtered through a cotton mesh. Pharmaceuticals use filtrate. For complete relief, take one teaspoon of filtrate with honey twice a day for 2-3 days.
25	*Ziziphus jujube*	regu	Rhamnaceae	Cough and Cold	Flower/ Bark	In a 1:3 ratio of water, ten to fifteen dried flowers of Argemone mexicana are combined with an equal quantity of dried bark from Ziziphus jujube and boiled. Afterwards, it is purified through a cotton mesh. For a period of two days, three teaspoons of filtrate and one teaspoon of honey are administered twice daily. It reduces the symptoms of a cold and congestion.
26	*Aegle marmelos*	Velaga	Rutaceae	Body ache	Bark	Sun-drying equal parts of *Aegle marmelos'* fresh fruit pulp and bark. Grinders or pestles make fine powder. One teaspoon of powder is mixed with one cup of hot water after meals twice a day for 3-4 days. Eat no cold foods, even cured ones, throughout this treatment.
27	*Aegle marmelos*	Velaga	Rutaceae	Epilepsy	Fruit	Mix *Aegle marmelos* pulp with equal parts milk and whisk well. Sugar is added to taste. For 15 days, two tablespoons of the formulation are taken in the morning and evening.
28	*Bergenia ciliata*	kondapindi leaves	Saxotragaceae	Kidney stones	Leaves	Administered in powdered form with water.

References

1. Annamalai R. Tamil Nadu Biodiversity Strategy and Action Plan Forest Biodiversity. Tamil Nadu Forest Department, Government of India, Chennai, 2004.
2. Biswas TK, Mukharjee B. Plant Medicines of Indian Origin for Wound Healing Activity: A review, International Journal of Lower Extremity Wounds,2003:2:25-39.
3. Brij L. Ethno botany of Baigas of M.P.: A Preliminary Report. Arunachal Pradesh forest news,1993:11:70-80.
4. Dhiman AK. Ethnomedicinal uses of some Pteridophytic species in India. Indian Fern journal,1998:15:61-65.
5. Jain SK. Ethanobotany: its scope and various subdisciplines. In: Jain S.K., Ed. A Manual of Ethnobotany Scientific Publishers, Jodhpur, 1995, 1-11.
6. Kala CP. Current Status of Medicinal Plants Used by Traditional Vaidyas in Uttranchal State of India. Ethnobotany Research and Applic.,2005:3:267-278.
7. Kala CP. Ethnobotany and Ethno conservation of Aegle marmelos (L.) Correa. Indian Journal Traditional Knowledge,2006:5:537-540.
8. Lewis WH, Elwin Lewis MP. Medical botany plants affecting human health. New York: Wiley, 2003, 812.
9. Parihar P, Parihar L, Bohra A. *In vitro* Antibacterial Activity of Leaves of Some Important Pteridophytes Journal of Microbiology and Antimicrobials,2010:2:19-22.
10. Principe P. Monetizing the PharmacologicalBenefits of Plants US Environmental Protection Agency, Washington DC, 1991, 2005.
11. Singh KK, Saha S, Maheshwari JK. Ethnomedicinal uses of Ferns amongst the Tribal Area of U.P. Indian Fern Journal,1989:6:66-67.
12. Siva R. Status of Natural Dyes and Dye Yielding Plants in India. Current Sciences,2007:32:916-925.
13. Tirkey A. Some Ethnobotanical plant species of C.G. State. Ethnobotany,2004:16:118-124.
14. Uddin MG, Mirza MM, Pasha MK. The Medicinal uses of Pteridophytes of Bangladesh. Bangladesh Journal of Plant Taxonomy,1998:5:29-41.
15. Verma P, Khan AA, Singh KK. Traditional phytotherapy among the Baiga Tribe of Shahdol District of Madhya Pradeh, India. Ethnobotany,1995:7:69-7.