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Study of some ethno medicinal plants used by Tribals of Raipur, Chhattisgarh, India

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Abstract

Raipur is one of the tribal district of Chhattisgarh and plants are being used as medicine and pharmaceuticals by large numbers of tribal, rural and urban people. Several tribal communities like Agariya, Urav, Baiga and Madiya inhabit in the area. An Ethno botanical surveys had been carried out in the Raipur district of Chhattisgarh from 2022-2023. The investigation deals about 34 plant species which are used by tribals of this area. A record of 34 medicinal plant species which is belong to 28 Family and 34 Genera used by tribals to cure various ailments among human beings are given. Ethno medicinal information was gathering through interview to Ojha and medicman for curing of diseases. The present paper deals with the ethno botanical study of Raipur district for the preparation of an inventory. Details of medicinal plants are described alphabetically, Botanical names followed by family, local names, plants part used, and the ethno medicinal uses have been provided.

Keywords: Raipur, ethnobotanical plants, traditional healers

1. Introduction

In the advanced nations, a quarter of pharmaceuticals are derived from plants and their extracts (Principle, 2005) ^[1] and the utilization of herbal remedies by the native populations residing in remote regions of numerous developing nations. Throughout the annals of human civilization, the indelible influence of botanically derived medicinal plants has permeated the tapestry of our existence, leaving an indomitable mark upon the annals of both history and prehistory (Lewis and Elwin, 2003) ^[2]. The profound significance of the ethnobotanical utilization of this exceptional collective cannot be overstated (Singh *et al.* 1998 and Dhiman, 1998) ^[3-4]. India stands as one of the world's 12th mega biodiversity hubs, boasting a plethora of lush vegetation with 47 thousand plant species and a diverse array of ethnobotanical plants. This rich tapestry of flora is intertwined with a longstanding tradition of plant-based knowledge, which is shared among the numerous ethnic groups that call India home (Sikarwar, 2002 and Siva, 2007) ^[5-6]. Chhattisgarh is the 26th state of India that is located between 17 to 23°7' north latitude and 8°40 to 83°38' east longitude.

The study was conducted in Raipur in India. It is situated between 22° 33' N to 21°14'N Latitude and 82° 6' to 81° 38'E Longitude. It occupies the south eastern part of the upper Mahanadi River valley and the bordering hills in the south and the east. The district is located on the Chhattisgarh plain, the areas near the hills being split off when the district was trifurcated.

Raipur district of Chhattisgarh is appreciably inhabited by tribal population. Even today, the largest segments of tribal population are dependent on plant resources for the treatment of different disease and ailments. The tribal societies are closely linked to the forest ecosystem with which they traditionally live with harmony and tribal peoples still derive their daily needs from various plants. The ethno-medicinal particularly in rural and tribal areas of India are still playing a great role in treatment of disease. Keeping in view, the importance of such invaluable knowledge in healthcare management and development of new and novel medicaments, the present investigation has been taken up.

The tribal communities of this region are dependent on wild plants for the treatment of different diseases and ailment. The present ethno-medicinal study was carried out to record traditional knowledge on plants used for medicinal purpose by the tribal and local peoples of Raipur district.

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2. Methodology

Ethno botanical survey was conducted in different tribal inhabited areas of Raipur district during 2022-2023. Extensive field trips were organized for collecting the plant species and data. The method adopted for collection of data was about medicinal uses of plants in the treatment of various diseases.

Ethno botanical information were collected by standard method of Jain and Rao (1977) [7]. A questionnaire was prepared to gather data for this purpose, the collected plant specimens were identified by using flora and others standard literature (Jain and Rao, 1991, Mudgal, *et al.* 1997, Verma *et al.* 1993, Singh, *et al.* 2001, and Verma, 2023) [8-12]. Information on plants used for other than medicinal purpose is also given. Information on ailments, plant part used, formulation along with dose and duration etc. gathered from tribals have been enumerated.

3. Results and Discussion

The plant species studied were arranged alphabetically along with their family, Local name, Medicinal uses, plant part used are as under:

Enumeration of plants

1. ***Aegle marmelos* Linn. (Rutaceae):** Local name-Belpatra, Plant part used-Fruit, Uses-The utilization of the fruit's pulpy substance in the production of confectionery intended to alleviate gastrointestinal issues.
2. ***Alysicarpus vaginalis* (L.) DC (Fabaceae):** Local name Chara-Sevro, Plant part used-Root, Uses-A blend of root paste and crushed Tulsi leaves is administered as a remedy for cough.
3. ***Abutilon indicum* (Linn.) Sweet. (Malvaceae):** Local name-Kanghi, Plant part used-Leaf, Uses-Mix 20 grams of leaf powders with 400 grams of wheat flour to create a bread that should be consumed at night for 30 days in order to address issues of uterus displacement.
4. ***Ageratum conyzoides* Linn. (Asteraceae):** Local name-Sahdehi, Plant part used-Leaf, Uses-Every morning, for a duration of approximately one month, it is recommended to administer leaf juice as a daily treatment for leucoderma.
5. ***Adhotoda zeylanica* Medic. (Acanthaceae):** Local name-Adusha, Plant part used-Leaf, Uses-Every morning, for six months, two leaves were ingested and eventually led to the cure of tuberculosis.
6. ***Andrographis paniculata* (Burm F.):** Wall. Ex Nees (Acanthaceae) Local name-Chhota chitra, Plant part used-whole plant, Uses-After immersing the entire plant in boiling water and extracting the filtrate, it is administered to individuals suffering from malarial fever. The plant is left to steep overnight, and its leaves are consumed internally to combat intestinal worms. Additionally, the leaves can be crushed with mustard oil and applied externally to reduce fever.
7. ***Annona squamosa* Linn. (Annonaceae):** Local name-Sitaphal, Plant part used-Leaves, Uses-The leaf juice is given orally as anthelmintic.
8. ***Azadirachata indica* A. Juss. (Meliaceae):** Local name-Neem, Plant part used-Bark, Uses-40 gm bark of Neem mixed with 40 gm bark of *Acacia nelotica* (Linn.) Willd *ex. Del.* Boiled and filtrated it and 50 ml is taken in empty stomach in the early morning for 7 day to treat 'Swet-Pradar' (white discharge).
9. ***Butea monosperma* (Lam.) Taubert. (Fabaceae):** Local name-Chhiwla/Palas, Plant part used-Seed, Uses-After moistening seeds and applying them to the affected area, a paste should be spread over a scorpion bite on a firm surface.
10. ***Balanites aegyptiaca* (L.) Delile (Balanitaceae):** Local name-Hingot, Plant part used-Fruit, Uses-Twice daily, children afflicted with pneumonia are administered a mixture of cow's milk and ripe fruit pulp to aid in their recovery.
11. ***Bombax ceiba* L. (Bombacaceae):** Local name-Semal, Plant part used-Root, Uses-Root is chewed by males to increase sexual vigor.
12. ***Boerhavia diffusa* Linn. (Nyctaginaceae):** Local name-Patharchatta, Plant part used-Root, Uses-The infusion of the entire *Vitex negundo* L. plant, complete with its verdant foliage, is subjected to a rigorous boiling process, meticulously filtered, and subsequently administered over a span of five consecutive days to effectively combat the debilitating condition known as elephantiasis.
13. ***Buchanania lanzan* Spreng. (Anacardiaceae):** Local name-Char, Plant part used-Bark, Uses-Stem bark with sugar candy mixed together, powdered and given in general weakness.
14. ***Cassia fistula* Linn. (Caesalpinaceae):** Local name-Amaltas, Plant part used-Fruit, Uses-The infusion of fruit pulp simmered in water and mixed with sugar is recommended for treating rheumatism over a period of five days.
15. ***Canscora diffusa* (Roxb.) Gentianaceae):** Local name-Chirata, Plant part used-Whole plant, Uses-The whole plant is kept in water over night and the filtrate is given internally in stomach trouble and also used as blood purifier.
16. ***Calotropis gigantea* (Ait.) R Br. (Asclepiadaceae):** Local name-Aak, Plant part used-Stem, Uses-Boiling a mixture of latex and mustard oil, then applying it externally to alleviate body pain for a period of three days.
17. ***Casearia elliptica* Willd. (Flacourtiaceae):** Local name-Chilla, Plant part used-Root, Uses-For a duration of three days, the powdered root is ingested as a remedy for gastric ailments.
18. ***Centratherum anthelminticum* (L.) (Asteraceae):** Local name-Jangli jeera, Plant part used-Seeds, Uses-On a daily basis, for a consecutive three-day period, the seeds are diligently pounded and ingested, effectively eradicating any presence of intestinal worms.
19. ***Cynodon dactylon* (Linn.) Pers. (Poaceae):** Local name-Doob, Plant part used-Whole plant, Uses-*Hibiscus rosasinensis* flower, old molasses and whole plant are crushed with rice washed water and it is given in empty stomach to treat menorrhoea.
20. ***Centella asiatica* (L.) Urb. (Apiaceae):** Local name-Brahami, Plant part used-Leaf, Uses-One teaspoonful dried leaves powder mixed with sugar and taken daily to increase memory.
21. ***Carica papaya* Linn. (Caesalpinaceae):** Local name-Papita, Plant part used-Fruits, Uses-The desiccated latex of juvenile fruit, when administered twice within cow's milk, serves as a potent agent for inducing abortion.
22. ***Clitoria ternatea* Linn. (Fabaceae):** Local name-Aparajita, Plant part used-Root, Uses-Decoction of root is given daily for three days in dropsy.
23. ***Convolvulus microphyllus* Sieb. (Convolvulaceae):** Local name-Shankhpushpi, Plant part used-Whole plant, Uses-A remedy of the entire plant, brewed in a

teaspoonful amount, is administered over a three-day period to alleviate symptoms of insomnia.

24. ***Costus speciosus* (Koen.) Smith (Zingiberaceae):** Local name-Keokand, Plant part used-Rizome, Uses-For a span of three days, the external application of the rhizome paste proves beneficial in alleviating the discomforting burning sensation experienced in one's eyes.
25. ***Curculigo orchoides* Gaertn. (Hypoxidaceae):** Local name-Kali musli, Plant part used-Root, Uses-Root paste is applied externally on head for three days.
26. ***Careya arborea* Roxb. (Lecythidaceae):** Local name-Jangali Bhindi, Plant part used-Root, Uses-The fresh root is chewed in snakebite.
27. ***Dillenia pentagyna* Roxb. (Dilleniaceae):** Local name-Bhangra, Plant part used-whole plant, uses-the entire botanical specimen is utilized topically for dermatological conditions.
28. ***Grewia hirsuta* Vahl (Tiliaceae):** Local name-Gursakari, Plant part used-Root, Uses-For a period of three days, the root paste is gently administered to inflamed testicles as a topical remedy.
29. ***Gloriosa superba* Linn. (Liliaceae):** Local name-Kalihari, Plant part used-Root, Uses-The external application of the root paste ensures convenient administration.
30. ***Holarrhena pubescens* (Buch-Ham), (Apocynaceae):** Local name-Doodhi, Plant part used-Stem, Uses-The paste of stem bark is applied externally in joint pain for three days. Stem bark with kali mirch (*Piper nigrum*) powdered and taken orally in malarial fever for three days or till the disease is not cured.
31. ***Haldina cordifolia* (Roxb.) (Rubiaceae):** Local name-Haldu, Plant part used-Reproductive parts, Uses-The delicate blossoms are transformed into a soothing paste, which is then gently administered to alleviate bodily discomfort.
32. ***Nyctanthes arbor-tristis* Linn. (Oleaceae):** Local name-Harsingar, Plant part used-Stem, Uses-The stem bark with (*Terminalia arjuna*) bark is pounded and the paste is applied externally in internal injuries for three days.
33. ***Syzygium cumini* (L.) Skeels. (Myrtaceae):** Local name-Jamun, Plant part used-Seed, Uses-Twice a day, a dosage of 5 grams of meticulously powdered dried seed is administered as an efficacious remedy for the affliction known as diabetes.
34. ***Mucuna pruriens* (L.) DC (Fabaceae):** Local name-Kojda, Plant part used-Root, Uses-The infusion of root extract is administered on an empty stomach with water to males experiencing sexual weakness.

In Raipur, a comprehensive survey was conducted to investigate the medicinal uses of various plants and plant parts in treating a wide range of diseases. The data analysis revealed that the root and leaves were the most commonly utilized for therapeutic purposes, followed by fruits, seeds, bark, and the entire plant. The tribal community in this region has identified numerous plant species that effectively treat important and common ailments, including digestive problems, cough, uterus displacement, leucoderma, tuberculosis, white discharge, scorpion bites, pneumonia, sexual vigor enhancement, male impotency, menorrhoea, memory improvement, abortion, diabetes, and sexual weakness. This communication serves as a documentation of 34 plant species from 28 families and 34 genera that hold significant traditional value. Each disease requires the

implementation of different plant parts. The plants used in these treatments are readily available in the vicinity, often providing immediate therapeutic benefits. It is worth noting that distinct plant species were utilized for each specific treatment.

4. Conclusion

Our research indicates that the Raipur tribe relies on plant resources for medicinal and other purposes. This data serves as a foundation for the discovery of new drugs, benefiting pharmaceutical companies in their search for innovative treatments. Ongoing ethnobotanical studies aim to further investigate the flora of Raipur, which offers a rich source of traditional medicinal plants.

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