

ETHNO MEDICINAL STUDY OF TRADITIONAL MEDICINAL PLANTS USED BY PEOPLE OF SOUTH BANKURA (JUNGLE MAHAL)

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Abstract:

An ethno-medicinal study was undertaken in different villages of south Bankura (jungle mahal) and data were obtained from tribal people mainly santal community and local herbal drug sellers. Information was collected by conducting structured questionnaire based interviews of such informants as well as traditional healers. The present work documented 26 ethno-medicinal plants of south Bankura, West Bengal, India belonging to 18 families were used by the local health healers for the treatment of various diseases. To cure various diseases local traditional healers were using leaves most commonly followed by bark, roots, seeds, whole plant and fruits. The conventional ethno medicinal plants were mostly used for cough and cold, skin diseases, wound healing, throat infection, fever, digestive problem, diarrhea, piles, hypertension, diabetes, sexual diseases, anemia, jaundice, tooth ache, bone fracture etc. The present work was carried out to explore the medical remedies of some medicinal plants used by the rural people of south Bankura (jungle mahal) in West Bengal, India for the treatment of human ailments.

Index Terms: Ethno medicinal, Medicinal plants, Tribal, Ailments, Jungle mahal.

I. INTRODUCTION

Plants have been used as a source of medicine for living beings from ancient times. According to an estimate of WHO, approximately 80% of the people in developing countries rely chiefly on traditional medicines for primary healthcare [1]. Ethno botany, the study of traditional human uses of plants, is recognized as an effective way to discover future medicines. Traditional medicinal system such as Unani, Ayurveda and Siddha played an important role for various ailments of rural people in India. Indigenous traditional knowledge is an integral part of the culture and history of a local community. It is evolved through years of regular experimentation on the day to day life and available resources surrounded by the community. During the past one century, there has been a rapid extension of allopathic medicinal treatment in India but still now the use of natural products as medicine, especially plant products are widely used among various tribal people particularly in the remote areas of west Bengal with few health facilities. This population is subjected to abject poverty and economic backwardness, often lacking in proper education and healthcare facilities. For healthcare, they mainly rely on traditional medicines that solely depend upon the supply of native medicinal plants. Their knowledge of tribal medicine (also known as 'folk' or 'indigenous' medicine) is mainly verbal, usually passed on from one generation to another without any written script, making documentation and record-keeping almost impossible. Studies suggest that the tribal and ethnic communities in India as part of their healthcare systems use more than 8000 species of plants and approximately 25,000 folk medicine-based formulations. India harbors a rich repository of untapped medicinal plants, with plenty of associated knowledge that needs to be appropriately utilized. The rising need to preserve the traditional medicinal knowledge of the country, legal protections (i.e. IRP-related issues) available to traditional healers, conservation of medicinal resources, cultivation of medicinally important plants, and translation of the traditional knowledge into drug development programme. Palpu Pushpangadan, (formerly at National Botanical Research Institute, Lucknow) presented an in-depth analysis of the ethno biological knowledge of the Indian tribes and possibilities of translating this knowledge in marketable pharmaceutical drugs. He mentioned that scientific validation, subsequent commercialization through patenting and licensing, and sharing of the benefits with stakeholders is crucial to the popularization of traditional medicinal knowledge. JEEVANI, an anti-ageing and anti-depressive drug developed from the Arogyapacha (*Trichopus zeylanicus*) plant was an outcome of the traditional knowledge of the Kani tribes of Kerala. Therefore, the earnings from the drug were shared with the tribal people for their educational and socio-economic developments. Cultivation of medicinally important plants, especially by local tribal people, is another important step. This will not only protect plants from over-exploitation, but will be an added source of income for the local people. Universities and research institutions should play an important role in ensuring that local population of a region gets maximum benefits from the medicinal wealth of its nearby area. S. K. Trigun (Banaras Hindu University, Varanasi) presented his work on modulation of carcinogenesis by fisetin (a natural flavonoid) in aflatoxinB1-induced hepatocellular carcinoma. It has been observed that more cancer patients die due to treatment than no availability of drug. Use of natural flavanoids could be effective in cancer treatment without causing toxicity. Thus, traditional medicinal knowledge and associated plants could play a central role in the drug development programme [2]. Herbal products or constituents could be used directly as curative agents as well as through isolation of lead molecules as a part of new drug discovery programmes. The present study is thus an attempt to document different plant species of south Bankura district used by the tribal people and local health healers to cure different ailments.

II. OBJECTIVE OF THE STUDY

Attempt to document different plant species of south Bankura used by the local health healers and tribal people to cure different ailments.

To discover future medicines from different plant parts.

To establish the relationship between medicinal plant resources and tribal people of the study area.

To established the significant influence of Ethno medicinal plants in tribal development.

III. MATERIAL AND METHODS

Study area

An ethno-medicinal study was undertaken in different villages of south Bankura (jungle mahal). Bankura is one of the most important district of West Bengal where most of the area is adjacent to the forest. It is located in the western part of the state West Bengal. Bankura lies between 22° 38' and 23° 38' North latitude and between 86° 36' and 87° 46' East longitudes. It has an area of 6,788 square kilometers [3]. On the north and north-east the district is bounded by Bardhaman district, from which it is separated by the Damodar River. On the south-east it is bounded by Hooghly district, on the south by Paschim Medinipur district and on the west by Purulia district [4].

Data collection

An ethno-medicinal study was undertaken in different villages of various blocks in south Bankura (Sarenga, Raipur and Ranibandh). The work was undertaken through field study carried out during the year 2015-2016. The ethno-botanical data were obtained from tribal people mainly Santal community (Tribal) and local herbal drug sellers. Information was collected by conducting structured questionnaire based interviews of such informants as well as traditional healers. Plant specimens were collected and identified following standard taxonomic methods. A total of 115 inhabitants of the tribal communities were interviewed. Randomly people were selected of which 80 men and 35 women of age 45 and above. There are also some earlier reports on ethno medicine with their uses of Bankura and Midnapore district [5-15].

IV. RESULT AND DISCUSSION

The present work documented 26 ethno-medicinal plant species of south Bankura; West Bengal, India belonging to 18 families were used by the tribal people and local health healers for the treatment of various diseases. The major plant families used by the tribals for their health care are Combretaceae (4species), followed by Apocynaceae(3 species),Acanthaceae(2 species), Caesalpiniaceae(2 species), Moraceae(2 species). And Meliaceae, Lamiaceae, Fabaceae, Sapotaceae ,Rubiaceae, Cucurbitaceae, Scrophulariaceae, Liliaceae, Piperaceae, Solanaceae, Verbenaceae, Anonaceae, Malvaceae (1 species each) represented in Fig.1. Different Ethno medicinal plant species with their Scientific name, family, vernacular name and uses of their different parts are given in table 1.

Some medicinal plant & their Use



***Alstonia scholaris* (Chhatim)**

Tribal people used stem bark in Pasty form with water to cure snake bite. Latex is used for chest pain and dental caries.



***Azadirachta indica* (neem)**

Bark is useful in malarial fever. Seed oil is used in skin diseases and in lice. Water decoction of leaves is administered and applied for Skin infection.



***Ocimum sanctum* (Tulsi)**

Tulsi leaf used to treat common cold, asthma, bronchitis, fever.



***Mimosa pudica*(Lajjabati)**

Root decoction used for leucorrhoea.



***Terminalia chebula* (Haritaki)**

Fruits are used as anti-inflammatory, carminative and digestive agent.



***Andrographis paniculata* (Kalmegh)**

Whole plant extract is useful for whooping cough and leprosy.

Table 1: Medicinal plants used by the tribal people of jungle-mahal

Scientific name of plant	Family	Vernacular name	Ethno-medicinal uses	Plant parts use
<i>Terminalia arjuna</i>	Combretaceae	Arjun	Bark is useful as cardio tonic as well as cardio protective and expectorant. Bark in pasty form externally used in different skin diseases, against herpes and leucoderma.	Bark
<i>Terminalia bellirica</i>	Combretaceae	Bahera	The oil obtained from the seeds is useful in skin disease, leucoderma and greyness of hair.	Seed
<i>Terminalia chebula</i>	Combretaceae	Haritaki	The fruits are used as anti-inflammatory, carminative and digestive agent.	Fruit
<i>Justicia adhatoda</i>	Acanthaceae	Basak	Leaves used to treat rheumatism, asthma; juice with honey taken to treat chronic bronchitis, cold and cough; paste with black pepper given to treat leucoderma	Leaf
<i>Rauwolfia serpentina</i>	Apocynaceae	Sarpagandha.	Roots: Used to treat high blood pressure, rheumatism, epilepsy, eczema and snakebite.	Root
<i>Quinqualis indica</i>	Combretaceae	Madhabilata	Leaves decoction prescribed in abdominal pain. Ripe seeds are roasted and given in diarrhea and fever.	Leaf, Seed
<i>Alstonia scholaris</i>	Apocynaceae	Chhatim	Tribal people used stem bark in pasty form with water to cure snake bites. Latex is used for chest pain and dental caries.	Bark
<i>Azadirachta indica</i>	Meliaceae	Neem	Bark is useful in malarial fever. Seed oil is used in skin diseases and in lice. Water decoction of leaves is administered and applied for Skin infection.	Bark, Seed, Leaf
<i>Ocimum sanctum</i>	Lamiaceae	Tulsi	Tulsi leaf used to treat common cold, asthma, bronchitis, fever.	Leaf
<i>Andrographis paniculata</i>	Acanthaceae	Kalmegh	Whole plant extract is useful for whooping cough and leprosy.	Whole plant
<i>Mimosa pudica</i>	Fabaceae	Lajjabati	Root decoction used for leucorrhea.	Root
<i>Madhuca indica</i>	Sapotaceae	Mahua	The oil obtained from seed is used as laxative. Bark used as astringent and good for inflammations.	Seed, Bark
<i>Paederia scandens</i>	Rubiaceae	Gandal	Leaf extract used in dysentery, diarrhea, piles and paralysis.	Leaf
<i>Cassia fistula</i>	Caesalpiniaceae	Bandar lathi	The leaf extract and fruit pulp are used as laxative. Flowers and pods used as febrifugal, astringent and purgative. Seed powder used in amoebiasis.	Leaf, Seed
<i>Catharanthus roseus</i>	Apocynaceae	Nayantara	Leaf extraction useful in diabetes and reduce high blood pressure and also use as anti cancer.	Leaf
<i>Ficus religiosa</i>	Moraceae	Aswatha	Bark is antiseptic, astringent, laxative. Aerial roots are given to women for inducing conception.	B R
<i>Coccinia grandis</i>	Cucurbitaceae	Tala Kachu	Root extract used as digestive and carminative agent. Leaf extraction used in ophthalmia and gonorrhoea.	Root, Leaf
<i>Bacopa monnieri</i>	Scrophulariaceae	Brhami	Fresh leaves roasted with ghee used for a long period to increase memory.	Leaf
<i>Aloe barbadensis</i>	Liliaceae	Ghritakumari.	Used in constipation, dyspepsia, menstrual suppressions, piles,	Whole

			abdominal tumours, menstrual complaints without conception.	plant
<i>Piper longum</i>	Piperaceae	Pipul	Roots applied to cause abortion upto 3-4 months of pregnancy; boiled in mustard oil and applied as massage on leucoderma.	Root
<i>Peltophorum pterocarpum</i>	Caesalpinaceae	Radhachura	The stem bark is useful in dysentery.	Bark
<i>Ficus benghalensis</i>	Moraceae	Bat	Infusion of bark is used in diabetes, dysentery and in seminal weakness.	Bark
<i>Solanum surattense</i>	Solanaceae	Kanta Begun.	Leaf juice useful in cough and dental caries. Fruits used as an adjuvant for promoting conception.	Leaf, Fruit
<i>Vitex negundo</i>	Verbenaceae	Nishinda	Leaf juice is useful for gout, inflammation and ulcers. Flowers are useful in fever, diarrhea and cardiac disorders.	Leaf
<i>Polyalthia longifolia</i>	Anonaceae	Debdaru	Stem bark is useful for diabetes and hypertension.	Bark
<i>Urena lobata</i>	Malvaceae	Ban okra	Root extraction used to treat hydrophobia. Fresh leaf juice applied to treat bone fracture.	Root, L

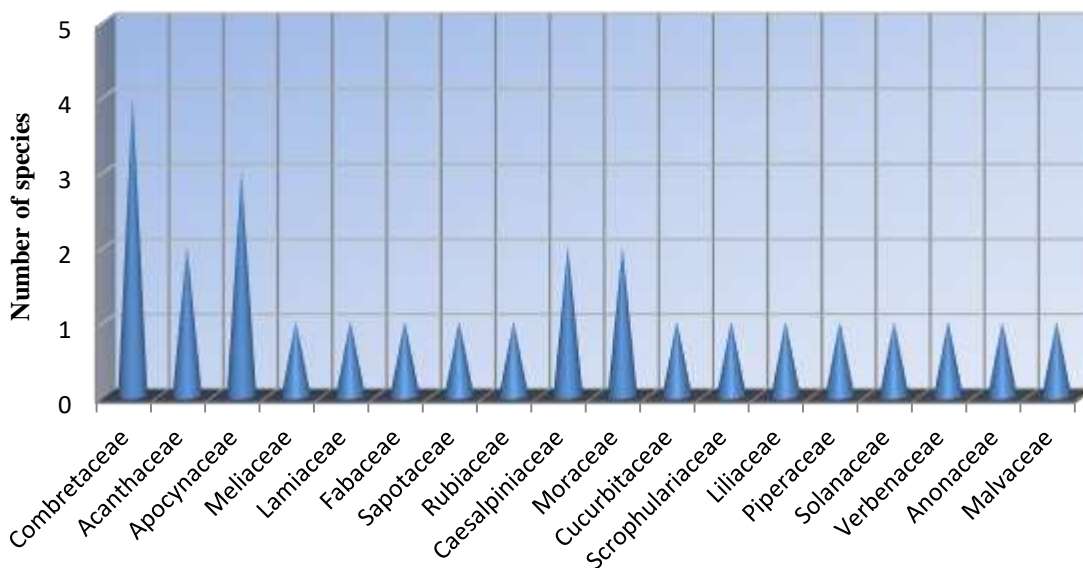


Fig. 1: Number of plant species in their respective family.

In this work it is investigated that different parts of medicinal plants were used as medicine. Different plant parts used by the local people and health healers are graphically represented with their respective percentage in Fig. 2. To cure various diseases Tribal people and local traditional healers were using leaves (L) most commonly followed by bark (B), roots (R), seeds (S), whole plant (WP), and fruits (F). And in Fig. 3 different collected plant parts are also showing from the traditional health healers and local ethno medicinal drug seller. From the study, it was found that conventional ethno medicinal plants were mostly used for cough and cold, skin diseases, wound healing, throat infection, fever, digestive problem, diarrhea, piles, hypertension, diabetes, sexual diseases, anemia, jaundice, tooth ache, bone fracture etc. (Table-1)

■ Leaf ■ Root ■ Bark
 ■ Whole plant ■ Fruit ■ Seed

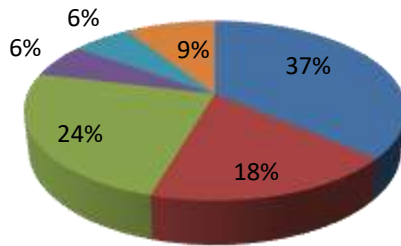


Fig-2 Graphical representation of different Plant parts in use.



Fig-3 Ethno Medicinal plant parts

V. CONCLUSION

The study area (south Bankura) is an important source of traditional medicinal plants. The tribal people and traditional healers are the main source of knowledge on medicinal plants. This ethno-medicinal knowledge has been transmitted orally from generation to generation. There was lack of organize data about these medicinal plants. Medicinal plants play an important role in providing knowledge to the researchers in the field of ethno-botany and ethno-pharmacology, so this study will attract the attention of ethno-botanists, phytochemists and pharmacologists for further critical investigation of medicinal plants present in south Bankura (Jungle mahal), West Bengal, India. It is also observed that some traditional plants in that area are fast eroding. The conservation efforts are needed by plantation and protection of these plants with maximum participation of local people.

Acknowledgement:

The author is highly thankful to the rural people who providing the information during the field study and shared their knowledge on herbal medicine during the field Study. Without their contribution, this study would have not been possible and highly obliged to the Principal, Acharya Prafulla Chandra College, New Barrackpore, Kolkata for constant help and encouragement.

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