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Ethno-botanical Study of Medicinal Plants Used by Tribals of Bankura Districts, West Bengal, India

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Ethno-medicine means the medical practices for the treatment of ethnic or aborigine people for their health care needs. 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. The present paper documented 43 ethno-medicinal plants of Bankura district, West Bengal, India belonging to 24 families were used by the local health healers for the treatment of different diseases. The conventional ethno medicinal plants were mostly used for different inflammation, cough and cold, leucoderma, different skin diseases, ulcers and leprosy. The medicinal plants used by the traditional users of Bankura district are arranged alphabetically followed by botanical name, family, local name and medicinal uses.

Keyword: Bankura, Ethno-medicinal plants, Tribals, uses.

1. Introduction

Our country is commonly called the Botanical Garden of the world, owing to her wealth of herbal medicines. India with its great topographic and climatic diversity has a very rich and diverse flora and fauna. The uses of plants as medicines have been practiced from an ancient time. From around 1500 B.C. Rig Veda is one of the important earliest available documents which emphasizes about herbal medicinal knowledge. Later on Indian herbalists such as Maharshi Charaka and Sushruta worked in searchof different herbal plant parts for different aliments of human body. Later on, it is reported that traditional healers use near about 2500 plant species and 100 species of plants serve as regular sources of medicine [1]. World Health Organization has stated that 80% of the world's population depends on traditional medicine for its primary health care and has become indispensable for its survival [2]. Since times immemorial, plants have been put to medicinal use by the traditional herbalists, Hakims, Vaidays, Ayurvedic practioners and the common man. Herbal medicine is the study and use of medicinal properties of plants.Therefore medicinal plants constitute precious resources for mankind. 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 [3-9]. The information relating to the medicinally

useful species and their uses along with traditional knowledge and practices are very fragmentary [10-18]. The present study is thus an attempt to document different plant species of Bankura district used by the local health healers to cure different ailments.

2. Materials and Methods

2.1 Study area

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. The district has been described as the connecting link between the plans of West Bengal on the east and Chota Nagpur plateau on the west. Bankura lies between 22º 38′ and 23º 38′ North latitude and between 86º 36′ and 87º 46′ East longitudes. According to census (2001), 10.36% among the total tribal population are resides in Bankura, ethno-medicinal practice is very common among the tribes. The tribal communities in this area are mainly Santal, Lohar, Bhumij, Lodha, Mahali and Sabar.

2.2 Data collection

An ethnomedicinal study was undertaken in some selected places of Bankura district (Simlapal, Khatra and Raipur). The survey was carried out during the year 2011-2012 in the tribal inhabited area of Bankura. The ethno-botanical data were obtained from tribal people, Vaidyas, Ojhas, local herbal drug sellers and the information collected from the available literature. The forests are being retrogressed to various stages of degradation because of biotic influences like excessive grazing, looping for fodder and fuel and unregulated felling, unscientific collection of medicinal plants by the health healers. A total of 321 inhabitants of the tribal communities were interviewed, randomly people were selected of which 207 men and 114 women of age 45 and above. Plant specimens were collected and identified following standard taxonomic methods and some of them were processed for herbarium and that will be deposited in the herbarium of Botany Department of Bankura Christian College, Bankura.

3. Results

In the present investigation 43 species of medicinal plants belongs to 24 families, total 40 genera were used for the treatment of different diseases. Out of the 24 families 2 were belongs to monocotyledons and 22 families were dicotyledons. The major plant families used by the tribals for their health care are Combretaceae (04 species), followed by Acanthaceae, Caesalpiniaceae, Lamiaceae and Rubiaceae (3 species). The different plants which have been documented during the present investigation along with their mode of use in different health treatment by the local health healers are given in the table 1. Different parts of medicinal plants were used as medicine by the local traditional health healers. Among the different plant parts, the leaves were most frequently used for the treatment of diseases followed by root, bark and whole plant parts. From the study, it was found that plants are mostly used to treat different inflammation, cough and cold, leucoderma, different skin diseases, ulcers and leprosy.

Table 1: Enumeration of different plant species is as follows-

Scientific name of the plant	Family	Vernacular name	Medicinal Uses
***Alstonia scholaris* (Linn.) R .Br.**	Apocynaceae	Chhatim	Stem bark used as febrifuge, spasmolytic, antidysenteric, hypotensive, also use as cardio tonic and chronic

			ulcers. Tribal people used stem bark in pasty form with water to cure snake bites. Latex is used for chest pain and dental caries.
***Andrographis paniculata* (Burm.f.) Nees.**	Acanthaceae	Kalmegh	Leaf paste made into tablets which is helpful to improve digestion and liver function. Whole plant extract is useful for whooping cough and leprosy.
***Azadirachta indica* A. Juss.**	Meliaceae	Nim	Leaf extract useful for skin disease, leprosy and intestinal worms. Leaf and seed extraction are used as a source of naturally occurring insecticides, pesticides and agrochemicals.
***Barleria cristata* Linn.**	Acanthaceae	Swetjhinti	Leaf juice useful in cough. Leaves are chewed in toothache.
***Boerhavia diffusa* Linn.**	Nyctaginaceae	Punarnovaa	Whole plant extraction useful in blood impurities, leucorrhoea and jaundice.
***Borassus flabellifer* Linn.**	Arecaceae	Tal	The juice of the leaf stalks and young roots is good for gastric and dyspepsia. Mesocarp portion of fruits are edible, used as an energy food for convalscents.
***Caesalpinia pulcherima* (L.) Sw.**	Caesalpiniaceae	Krishnachuura	Root decoction used in intermittent fevers, bark is abortifacient.
***Cassia fistula* Linn.**	Caesalpiniaceae	Bandar lathi, Amaltus	The leaf extract and fruit pulp are used as laxative. Flowers and pods used as febrifugal, astringent and purgative. Root pastes are used for skin disease and tuberculous glands. Seed powder used in amoebiasis.
***Catharanthus roseus* (L.) G. Don.**	Apocynaceae	Nayantara	Leaf extraction useful in diabetes and reduce high blood pressure. Root extraction contains two main alkaloids i.e **Vincristine** and **Vinblastine** which are acting as an anti cancerous agent.
***Clitoria ternatea* Linn.**	Papilionaceae	Aparajita	The root is administered with honey as a general tonic to children for improving mental faculty. Root bark- diuretic.
***Coccinia grandis* (L.) Voigt.**	Cucurbitaceae	Tala Kachu	Root extract used as digestive and carminative agent. Leaf extraction used in opthalmia and gonorrhea.
***Commelina benghalensis* Linn.**	Commelinaceae	Kanchira	Leaf juice used for antidote to snake bite. Whole plant extraction used to treat leprosy.
***Eclipta prostrata* Roxb.**	Asteraceae	Keshute	Leaf extraction used to promote hair growth and in jaundice. Whole plant extraction used for skin diseases and asthma.
***Evolvulus alsinoides* Linn.**	Convolvulaceae	Shankhyapuspi	Whole plant extraction used to treat leprosy and leucoderma.
***Ficus benghalensis* Linn.**	Moraceae	Bat	Infusion of bark is used in diabetes, dysentery and in seminal weakness.
***Ficus religiosa* Linn**.	Moraceae	Aswatha	Bark is antiseptic, astringent, laxative. Bark used in diabetes, diarrhea, leucoderma. Dried fruits pulverized and taken with water to cures asthma. The

			latex is good agent for inflammation, blood dysentery and haemorrhages. Aerial roots are given to women for inducing conception.
***Leucas cephalotes* (Roth.) Spreng.**	Lamiaceae	Bara Halkasha	Whole plant extraction used as stimulant. Flower in the form of syrup used as remedy for cough and cold.
***Madhuca indica* J.F.Gmel.**	Sapotaceae	Mahua	The oil obtained from seed is used as laxative. Bark used as astringent and good for inflammations.
***Mentha piperata* Linn. emend. Huds.**	Lamiaceae	Pudina	A volatile oil obtained from the plant is well known in medicine for its antiseptic, stimulant and carminative properties.
***Michelia champaca* Linn.**	Magnoliaceae	Swarnachampa	The stem bark is useful in chronic gastritis, fever and cough.
***Mimusops elengi* Linn.**	Sapotaceae	Bakul	Flowers are used for preparing a lotion for wounds and ulcers. Pulps of ripe fruits are used in chronic dysentery. Seeds are used for preparing suppositories in case of constipation especially in children.
***Morinda pubescens* J.E. Smith.**	Rubiaceae	Bhurtandi	Leaves are used as digestive and carminative agent. Root in paste form is useful in haemorrhages.
***Mussaenda frondosa* Linn.**	Rubiaceae	Mussanda	Leaves and flowers used in external applications for ulcers. Root paste used in the treatment of white leprosy.
***Ocimum gratissimum* Linn.**	Lamiaceae	Ramtulsi	Fresh leaves are used in constipation, cough, and fever also in gonorrhea with difficult urination. Leaf juice with common salt given to babies in gripe.
***Oxalis corniculata* Linn.**	Oxalidaceae	Amarul	Whole plant extraction used as carminative, liver tonic, anti bacterial and antiseptic agent.
***Paederia scandens* (Lour.) Merrill.**	Rubiaceae	Gandal	Leaf extract used in dysentery, diarrhea, piles and paralysis. Leaf juice with un boiled egg used to treat night blindness.
***Peltophorum pterocarpum* (DC.) K. Heyne.**	Caesalpiniaceae	Radhachura	The stem bark is useful in dysentery.
***Peristrophe bicalyculata* Nees.**	Acanthaceae	Nasabhaga	Leaf paste applied on cuts and wounds to immediate stop of blood.
***Phoenix sylvestris* Roxb.**	Arecaceae	Khajuur	Seed paste is good for the opacity of the cornea, inflammation and wounds. Roots used for nervous debility.
***Polyalthia longifolia* (Sonn.) Thwaites.**	Anonaceae	Debdaru	Stem bark is useful for diabetes and hypertension.
***Portulaca oleracea* Linn.**	Portulacaceae	Nona Sak	Leaves are used as vegetable by tribal people. Leaf extraction is also useful in tumors, inflammation & nephropathy.
***Pterocarpus marsupium* Roxb.**	Papilionaceae	Murga	Leaf juice is useful for sores and skin diseases.
***Quinqualis indica* Linn.**	Combretaceae	Madhabilata	Leaves decoction prescribed in abdominal pain. Ripe seeds are roasted

			and given in diarrhea and fever.
***Scoparia dulcis* Linn.**	Scrophulariaceae	Ban dhane	Leaf extraction used to treat cough, burning sensation in pulmonary artery and veins. Leaf juice taken in empty stomach to treat painful urination.
***Sida cordifolia* Linn.**	Malvaceae	Berela	Leaf extraction useful in dysentery. Root extract used in urinary troubles and haematuria**.**
***Solanum surattense* Burm. f.**	Solanaceae	Kanta Begun.	Leaf juice useful in cough and dental caries. Fruits used as an adjuvant for promoting conception.
***Tectona grandis* Linn.f.**	Verbenaceae	Segun	Woods used as expectorant, anti-inflamatory, anthelmintic. Bark-astringent, used in bronchitis. The oil obtained from seeds and flower is useful for treatment of scabies, eczema and ringworm. Flower used in bronchitis and urinary discharges.
***Terminalia arjuna* (Roxb. ex DC) Wight. & Arn.**	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.
***Terminalia bellirica* (Gaertn). Roxb.**	Combretaceae	Bahera	The oil obtained from the seeds is useful in skin disease, leucoderma and greyness of hair.
***Terminalia chebula* Retz.**	Combretaceae	Haritaki	The fruits are used as anti-inflammatory, carminative and digestive agent.
***Urena lobata* Linn.**	Malvaceae	Ban okra	Root extraction used to treat hydrophobia. Fresh leaf juice applied to treat bone fracture.
***Vernonia cinerea* Less.**	Asteraceae	Choto Kuksima	Whole plant extract used to cure asthma, bronchitis and piles.
***Vitex negundo* Linn.**	Verbenaceae	Nishinda, Boan	Leaf juice is useful for gout, inflammation and ulcers. Flowers are useful in fever, diarrhea and cardiac disorders.

4. Discussion:

The use of herbal medicines is wide spread in this region with higher percentage of the tribal as well as non tribal population relying on it. This is because of lack of awareness, shyness and lack of modern medical facilities available in their region and the high cost of modern medical system for treatment are unaffordable by tribal. The information documented in this work is totally from primary sources being based on the uses of the locally available plants by the people as their household remedies. The medicine varies according to the symptoms and with the tribe and place it means that a particular plant is sometime prescribed for different ailments in different localities and sometimes they apply a mixture of plants for remedy of diseases. The observation of present study showed that traditional medicine plays a significant role among the local people of Bankura.

5. Conclusion:

The rural area of this district which was our study area is an important source of traditional medicines. More information may be explored from the peoples residing

in the remote villages in this district. The traditional healers are the main source of knowledge on medicinal plants. This knowledge has been transmitted orally from generation to generation; however it seems that it is vanishing from the modern society since younger people are not interested to carry on this tradition. 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. Medicinal plants play an important role in providing knowledge to the researchers in the field of ethono botany and ethno pharmacology so this research article will attract the attention of ethno botanists, phytochemists and pharmacologists for further critical investigation of medicinal plants present in the districts of West Bengal, India.

In Bankura district, many local people are going for agriculture and sustainable harvesting of plants with medicinal value which helps not only in conservation of these traditional medicinal important plants but also in marketing of these plants and their products for economic growth of the people.

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