

Ethnobotanical studies of Stem Bark of Some Important Medicinal Plants of Ahobilam Reserve Forest, Kurnool District, Andhra Pradesh, India.

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Abstract

Plants have an immense role in the sustainability of human life and are being used since ancient times to fulfill their needs. The complex relationship between the plants, humans and cultures is studied with the help of ethnobotany. In India, the use of different parts of several medicinal plants to cure specific ailments has been practiced since ancient times. Ethnobotanical studies were carried out to collect information on the use of medicinal plants by the tribal community (Chenchus) who live in the forests of Nallamalai forest of Kurnool district, Andhra Pradesh, India. The present paper deals with identification of 40 medicinal plants. The paper enumerates 30 medicinal plant species belonging to 28 genera and 20 families, whose stem barks are used for ethnobotanical purposes by the Primitive Chenchu Tribal Groups of Ahobilam Reserve forest of Kurnool district, Andhra Pradesh.

Key Words: Ethnobotany, Stem bark, Primitive Tribal Groups

Introduction

Nature has blessed mankind with a treasure of medicinal plants. Medicinal plants are the “local heritage with global importance” playing a vital role in world health care system for developing countries. India has a rich biodiversity of medicinal and aromatic plants and holds a unique place in the world in the traditional system of medicine. (Mishra M., 2011) Since the prehistoric time, alleviation of diseases has been one of the primary concerns of mankind. Medicinal plants have been used for centuries as remedies for human diseases. They constitute an effective source of both traditional and modern medicine. The acceptance of traditional medicine as an alternative form of health care has led researchers to further investigate antimicrobial activity of medicinal plants. Studies revealed that herbal medicine represents one of the most important fields of traditional medicine. WHO recognized that medicinal plants have played an important role in the health care of about 80% of the world population in developing countries and depend largely on traditional medicine. Industrialization has led to many modifications in the lifestyle of the world's populations, giving rise to an increase in the incidence of several diseases, including chronic degenerative diseases such as insulin resistance, diabetes mellitus, dyslipidemia, metabolic syndrome and cardiovascular diseases, reducing the quality of life and increasing costs

on hospitalizations, medications and other public health intervention (Sharma H, Chandola HM (2011), Remington PL et al.,(2011).

Bark is the outer hard layer covering the trunk of the plant. From ethnobotanical point of view it has immense importance in day to day life of the people through out the world. Bark is the outermost layers of stems and roots of woody plants. Plants with bark include trees, woody vines, and shrubs. Bark refers to all the tissues outside the vascular cambium. Depending on the chemical compounds found in the cell walls of the tissue layers that make up bark. "Bark contains many different compounds, including lignins, tannins and suberins. These reflect and absorb different wavelengths of light, which explains the variations in colour we see."The concentration of tannins, in particular, gives bark a reddish brown colour.

Similar to skin, bark is the outer covering of a tree. It adapts to protect the living tree from the environment, and protects delicate tissues from diseases and insect attack. There is an enormous amount of research being conducted in the medical field to determine the benefits of bark. Researchers recently declared that anti inflammatory compounds called phenolics found in the bark of Scotch pine may prove effective in fighting arthritis. The pine bark extract may potentially treat high blood pressure, asthma and heart disease. In Europe, the willow bark extract is currently being prescribed to treat lower back pain. A popular anesthetic, tubocurarine, is extracted from bark. A few cancer drugs are also extracted from bark.

Medical plants contain large varieties of chemical substances which possess important therapeutic properties that can be utilized in the treatment of human diseases. The studies of Medicinal plants used in folklore remedies have attracted the attention of many scientists in finding solution to the problems of multiple resistances to the existing synthetic antibiotics. Most of the synthetic antibiotics now available in the market have major setback due to the multiple resistance developed by pathogenic micro-organisms against there drugs (Akinpelu, et al.,2008).

Ahobilam, one of the famous temple sanctity areas of South India is located in Andhra Pradesh. The Ahobilam forest is divided into upper and lower Ahobilam. It is situated between long. 78°23'— 78°56'E and lat. 14°55'—15°24'N. It has an average elevation of 327 meters (1076 feet) Rainfall averages about 90 cm and is concentrated in the months of the South West Monsoon (June–Sep).According to Hindu mythology, Lord Narasimha is present in nine forms in nine temples which are on the hill ranges of Ahobilam forest.The Chenchus are the major tribes inhabiting in Nallamalais. The Chenchus are a small scheduled tribe in Andhra Pradesh. Originally theChenchus were nomadic, hunter gathers

Materials and Methods

Plant specimens have been collected from all over Ahobilam Reserve forest through several field trips covering all seasons during 2017 – 2018. Herbarium voucher specimens are deposited in Department of Botany at Osmania UG & PG College, Kurnool Aandhra Pradesh, India. The Medicinal parasitic plants were identified by the local people with their vernacular names, photographed and sample specimens were collected for the preparation of herbarium. The Flora of Kurnool by Raju and Pullaih(1997) was used to ascertain the Emphasis has also been given to the economically important species particularly the medicinal plants used as primary health-care by the Tribal people of Ahobilam Reserve Forest.

Results and Discussion

The present study yielded 30 species covering 28 genera and 20 families used by the Primitive Tribal Groups of Ahobilam Reserve forest district to cure human ailments and in their daily use. (Table.1)The common ailments cure by them are abdominal pain, abortion, allergy, amoebic dysentery, anti-emetic,antidote to poison, arthritis, asthma, back pain, boils, blisters,blood dysentery, body pains, bone fracture, burning sensation, Of the 20 families Combretaceae and Fabaceae was found to be dominant with 5 species followed by two species Bignoniaceae,Burseraceae Euphorbiaceae, the remaining families are represented single species.

Conclusions

Ethnobotanical surveys of medicinal plants can indicate the level of biodiversity conservation and human health by integrating social and ecological analytical elements. Ethnobotanical research can provide a wealth of information regarding both past and present relationships between plants and the traditional societies Indigenous herbal treatment is a part of the culture and dominant mode of therapy in most of the developing countries. . Many medicinal plants occurring have yet to be subjected to rigorous chemical screening and pharmacological investigation.

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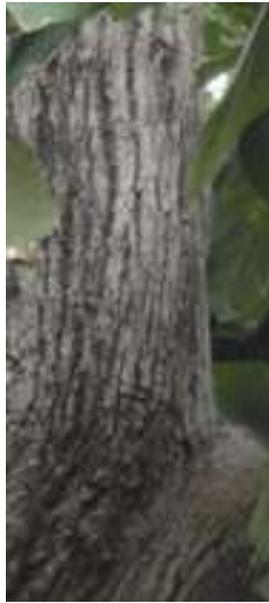
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Plate.1

Terminalia bellarica*Boswellia serrata**Commifera caudata**Terminalia arjuna**Morinda pubescence**Pongamia pinnata**Allangium salvifolium**Mallotus philipoenensis* *Dalbergia latifolia*



Aegle marmelos



Emblica officinalis



Ficus religiosa

Plate.2



Butea monosperma



Mangifera indica



Millingtonia hertensis



Terminalia cattapa



Pisidium guva



Moringa tinctoria



Sapindus emarginatus



Polyalthia longifolia



Holoptelia integrifolia

Plate.3



Grweia robusta





Table.1 Medicinal important barks of Medicinal plants

S.No	Scitific name	Family	Vernaculat name	Habit	Medicinal importnace
1	<i>Aegle marmelos</i> (L.) Correa.	Rutaceae	VN: Maredu E: Bael	Tree	Tumours in stomach: Bark paste mixed with half cup of water is administered twice a day till cure. Stomach disorder, intermittent fevers, heart disorder (Veerappan A K.2000, George K V, 2003)
2	<i>Alangium salvifolium</i> (L. f.) Wang.	Alangiaceae	VN: Ooduga E: Stone mango	Tree	Neurological weakness: Stem bark paste mixed with root paste of <i>Achyranthes aspera</i> is administered twice a day till cure
3	<i>Azadirachta indica</i> A.Juss	Meliaceae	VN: vepa chettu, E: Margosa tree	Tree	Dysentery: Stem bark paste mixed with half cup of water is administered twice a day for 2 days. Stomach pain: Stem bark paste along with tuberous pastes of <i>Acorus calamus</i> and <i>Rauvolfia serpentina</i> mixed in half cup of water is administered twice a day for 2 days.
4	<i>Dalbergia paniculata</i> Roxb.	Fabaceae	VN: Chitakura	Tree	Toothache: Stem bark paste is applied on effected teeth and brush the teeth with tender shoots once a day for 3 days.

5	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	VN: Ganuga E: Indian beech tree		Contraceptive: Stem bark along with that of <i>Cipadessa baccifera</i> and a pinch of salt are ground and administered with three spoons of water thrice a day. the bark is used an antiseptic treats cuts and wounds Prandikumar et al., (2011)
6	<i>Sterculia urens</i> Roxb.	Sterculiaceae	VN: Kovila chettu E: Gum karaya	Tree	Amoebic dysentery: Gum along with stem bark paste of <i>Bombax ceiba</i> mixed with curry of ladies finger is eaten thrice a day for 2 days.
7	<i>Terminalia alata</i> Roth	Combretaceae	VN: Nallamadi E: Black murdah	Tree	Malaria: Twenty g of stem bark mixed with 100 ml of water is given in small doses thrice a day for 3 days.
					Mental disorder: Stem bark along with that of <i>Ficus bengalensis</i> <i>Atrocarpus heterophyllus</i> and <i>Moringa oleifera</i> are ground and mixed with half cup of water is administered twice a day for 5 days
8	<i>Terminalia arjuna</i> (Roxb. ex DC.)	Combretaceae	VN: Tellamadhi E: Arjun tree	Tree	Boils and blisters: Stem bark paste is applied all over the body and 50 mg of bark paste is given orally once a day till cure. Bark ash is used in the treatment of the snake bite and scorpion sting (Yesodharan K and Sujana KA, 2007)
9	<i>Terminalia bellirica</i> (Gaertn)	Combretaceae	VN: Tani E: Myrobalm	Tree	The bark of <i>Terminalia arjuna</i> has been used in India for more than 3000 years, primarily as a heart remedy, The bark is mildly diuretic and is useful in anaemia and leucoderma Abdominal pain: Stem bark paste mixed with half cup of water is administered twice a day for 2 days

10	<i>Morinda tomentosa</i> Heyne ex.roth	Rubiaceae	VN: Maddi	Tree	The bark of the plant is also useful in treating mental illness, epilepsy, yellow fever, jaundice and syphilis. It can act as a fumigant to heal circumcision wound(Shahzad A, Sahai A,2013)
11	<i>Chloroxylon swietenia</i> DC	Flinderaceae	VN: billudu E.East Indian satin wood	Tree	Stem bark paste is used as an external application on wounds (Reddy KN, Trimurthulu G and Ch. S Reddy 2008) a decoction of the stem bark, together with that of <i>Mangifera indica</i> , <i>Madhuca indica</i> and the leaves of <i>Holoptelea integrifolia</i> and <i>Dendrocalamus strictus</i> are used in bath to treat jaundice. (Parotta AJ,2001)
12	<i>Mangifera indica</i> L.	Anacardiaceae	VN: Mamidi E.Mango	Tree	The bark and leaves have astringent properties and are used in Nigeria as lotion to relieve toothache, sore gums, sore throat or as an infusion in malaria, diarrhea and dysentery treatment (S. A. Adesegun and H. A. B. Coker 2001,. B. Oliver-Baver 1986) Bark is useful for urinary complaint.
13	<i>Madhuca indica</i> J.F.Gmel.	Sapotaceae	VN: ippa	Tree	Decoction of equal amount of bark of <i>Madhuca indica</i> , <i>Mangifera indica</i> and <i>Syzygium cumini</i> with honey is taken daily for 4-5 days to cure dysentery and diarrhoea.
14	<i>Anogeissus latifolia</i> (Roxb.ec.Dc)	Combretaceae		Tree	The powdered bark is applied to wounds, sores, boils, cyst and diabetic ulcers with good results (Ogunyemi, 1979)
15	<i>Oroxylum indicum</i> (L.)	Bignoniaceae	VN:Pampena	Tree	Bark of the plant are used in fever, pneumonia and respiratory troubles (Panghal et al.,2010;Patil et al.,2008),. It is also used to cure various

					stomach disorders (Raut et al., 2009)
16	<i>Pterocarpus santalinus</i> Linn	Fabaceae	VN: Raktha chandanam, E.Red sander	Tree	The stem bark extracts is also used in treatment of cough and diabetes
17	<i>Butea monosperma</i> (Lam)	Fabaceae	VN: Moduga	Tree	Stem bark has antifungal propertie (Rai Geeta,2011)
18	<i>Millingtonia hortensi</i> L.f.	Bignoniacea	VN: buddapulu	Tree	stem bark is used traditionally as mainly lung tonic, antiasthmatic and antimicrobial properties cold infusinon
19	<i>Mallotus philipensis</i> (Lam.)	Euphorbiaceae	VN: Sinduri	Tree	of the bark is given in a dose of 40-50 ml to treat renal calculi and in retension of urin
					The bark of Mallotus philippensis has been used for typhoid and
					meningitis(Manandhar N.P.,2000)
20	<i>Holopteeia integrifolia</i> (Roxb.)	Ulmaceae	VN: nemali nara	Tree	Bark juice is applied to rheumatic swellings(Kirtikar, K.R 1999). Paste of bark and leaf is applied externally for treatment of leucoderma
21	<i>Psidium guajava</i> Linn.	<i>Myrtaceae</i>	VN: Jama	Tree	The decoction made from the bark of this plant is also used against ringworms, ulcers, diarrhea, and dysentery.The bark traditionally used as astringent, haemostatic, constipating and antiemetic as well as used to treat haemorrhages, diarrhea and dysentery especially in children(Kirtikar KR, Basu B.1999)
22	<i>Boswellia serrata</i> (Roxb.)	Burseraceae	VN: advisambrani	Tree	The decotion of the stem bark is used to treat rhematism ,septic sores venereal deseases and gastrointestinal aliments Burkill 1985)
23	<i>Commiphora caudata</i> (Wt&Arn.)	Burseraceae	VN: Gugilam	Tree	Bark is antiviral, antispasmodic, cytotoxic,

					hypothermic activity (Dhar ML .1968)
24	<i>Moringa oleifera</i> Lam	Moringaceae	VN: Munaga E.Drumstick	Tree	Anti-Inflammatory and Analgesic Activity
25	<i>Dalbergia latifolia</i> Roxb	Fabaceae	VN: Jettegi E.Rose wood	Tree	traditionally, they are also used for analgesic,aphrodisiac ,antipyretic and antiinflammatory(Nadkarni 1954; Kirtikar et al., 1991)
26	<i>Emblca officinalis</i> Linn	Euphorbiaceae	VE.Usiri E.Goosberry	Tree	used as antiinflamotroy and antipyretic treatemtn by tirbal people
32	<i>Ficus religiosa</i> L.	Moraceae	VN:Raavi	Tree	Traditionally the bark is used as an antibacterial, antiprotozoal, antiviral, astringent, antidiarrhoeal, in the treatment of gonorrhoea, ulcers, it has been used in the treatment of various diseases such as cancer, inflammation, or infectious diseases. (Uddin SJ, Grice ID, Tiralongo E,2009)
27	<i>Terminalia catappa</i> L.	Combretaceae	VN:badm chettu E.Almond	Tree	Bark extracr is used as anticancer,antioxidant,anti-inflammatory,antidiabetic (N. Nagappa, P. A. et al.,2003)
28	<i>Sapindus emarginatus</i> Vahl.	Sapindaceae	VN: Kukudukaya E.soap nut	Tree	Bark traditionall yused as antiinfalnaotry and antipyretic
29	<i>Polyalthia longifolia</i> (Sonn.)	Annonaceae	VN:Nara maamidi	Tree	The bark is used in treatment of gynecological disorders, The decoction of bark is used for curing mouth ulcers.he bark is used in treatment of diabetes and high blood pressure
30	<i>Strychnosnux- vomica</i> L.Sp	Loganiaceae	VN: Musti	Tree	It is used to elevate blood pressure (David MW,2002)