

Received: 03rd June 2017 Revised: 14th August 2017 Accepted: 01st November 2017

Research Article

ETHNO BOTANICAL STUDIES OF SOME SELECTED MEDICINAL PLANTS OF PATHAPATNAM MANDALAM, SRIKAKULAM DISTRICT, ANDHRA PRADESH, INDIA

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ABSTRACT

Since ancient times, plants have been used as medicine, food, agrochemicals and pharmaceuticals by number of tribes, rural and urban peoples. The tribal region of Andhra Pradesh, has not received proper attention of ethno medicinal researchers. The information on plants was collected interviewing the local tribal traditional practitioners. The present study revealed that the plants which are used in traditional systems are mostly collected from the wild resources. A total of 44 plant species, 40 genera and 24 families of ethno botanical interest upon inquiries from these tribal informants between the age of 30-75 were reported. They have been using these parts in the form of paste, powder, decoction, juice, infusion and also in crude form, with other additives like honey, curd, and urine and cow milk to get relief from different ailments like diabetes, Abortion, Jaundice, Snakebite, cough, Blood pressure and other diseases. The study therefore concludes, it is necessary that suitability requirements are needed in order to protect the traditional knowledge in a particular area with references to medicinal plants utilization.

Keywords: *Ethno Botanical Studies, Selected Medicinal Plants, Pathapatnam*

INTRODUCTION

Plants have been used both in the prevention and cure of various diseases of humans and their pets. With the advent of human civilization, many systems of therapy have been developed primarily based on plants. Ayurveda, Homeopathy, Siddha, Unani etc. are our traditional systems of medicine. The World health organization has estimated that over 80% of the global population rely chiefly on traditional medicine (Akerele, 1992). Ethno botanical research can provide a wealth of information regarding both past and present relationships between plants and traditional societies. It is hoped that in the future, ethno botany can play an increasingly important role in sustainable development and biodiversity conservation (Rajasekaran & Warren 1994). The indigenous people of various regions have developed their own way of using plants for their health care and following their own culture, customs, folk songs and food habits. This knowledge is transferred through orally from one generation to another. The main focus of the present study is to ascertain the detailed information on the use of plants and their therapeutic medical practices popular among Savara, Jatapu and Gadaba tribals of study area. The main aim of the present investigation is to mainly focus the hidden and unexplored valuable knowledge of the tribal community and to aware the man kind about the value of vegetation and mostly to give further research in the field of ethno botanical studies. There are so many workers have been done by ethno botanical studies of Andhra Pradesh, Reddy *et al.*, (2006) reported ethno botanical observations on some endemic medicinal plants of Eastern Ghats. Pullaiah (2007) Provided information for 412 plants in his publication of medicinal plants of Andhra Pradesh. Savitamma *et al.*, (2007), Prayaga Murthy *et al.*, (2012), Srinivasa Rao *et al.*, (2014) reported ethnobotanical information for the 158 plant species in Makkuva mandalam, Vizianagaram district, Padal *et al.*, (2013) and Venkaiah (1980,1998) have been worked in ethnobotanical studies, nobody can work in the ethno botanical studies on Pathapatnam mandalam of Srikakulam district.

Study Area

Pathapatnam Mandal was formed in the Year 1984. The Mandal was high density of tribal population and identified as agency area located in northern part of Srikakulam district, North bounded by Parlakimidi, South by Saravakota and Hiramandalam. East by Meliaputti and West by Kothuru Mandal. The Eastern

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Ghats run roughly parallel to sea from the north east to south east of Srikakulam and therefore the Mandal drains from the Eastern Ghats to the coast. The Eastern Ghats, run from Pathapatnam (North West area of Srikakulam District) provide ample scope and exert profound influence on the economy and socio-cultural activities of the tribes. The pathapatnam Mandal (study area) is inhabited dominantly by two tribal groups, namely Savara, Jatapu and vary less population (58,134) as per 2011 census. The layout of settlement differs from tribe to tribe. The primitive culture of aborigines of this area is of pre-historic in origin, the evidence for Stone age culture are found in the Upper Godavari region and several micro and megalithic sites have since been discovered. The main occupation of these tribes is agriculture. Almost all tribal groups in the mandal practice Podu cultivation (Shifting cultivation) on the hill slopes and plough cultivation in plains.

MATERIALS AND METHODS

Methodology

The tribes, Savaras, Jatapus and Gadabas were studied for their relationship with plants in both material and cultural or spiritual relations. Plants employed material culture and plants associated with folk tales, magico-religious beliefs, mythology, taboos, ceremonies etc. were studied along with their vernacular or local or regional names. Regular ethno botanical surveys were undertaken with Savaras, Jatapus and Gadabas tribals at their habitations of Pathapatnam Mandal. Oral interviews with the tribal doctors, priests, women and workers and the information was recorded in a tape recorder. Some specific questions were asked and the information given by the tribals was written in the field books. The data was verified with other tribal people of different villages showing the sample plants specimens and the information given by the previous tribal people. The experienced tribal doctors were taken into the field and collected voucher plant specimens and the uses of these plants were recorded. Information on plants used by the tribals for food, construction of huts, for the preparation of intoxicating drinks (alcoholic drinks), for fibres and magico-religious beliefs with their local names were collected. Some pains have been taken to reach some interior villages of tribal areas of Pathapatnam mandal. Some personal observations were recorded in the field note book, on habit, habitat, phenology, abundance, and conservational aspects of various plants which were used by the tribal's. The names of tribal doctors, other knowledgeable people, women who have given the ethno botanical information were recorded. Plant specimens were collected either with flower or fruit or with both. They were dried and poisoned with saturated solution of mercuric chloride in rectified spirit and herbarium specimens were prepared with their botanical names and deposited in the Herbarium of botany department, Andhra University, Visakhapatnam.

RESULTS AND DISCUSSION

The present study includes 44 species representing 40 genera of 24 families of Angiosperms were recorded in Pathapatnam mandalam. These plants species were used by tribal's Savaras, Jatapus and Gadabas as food, for shelter and as herbal medicines. This tradition knowledge was learned from their forefathers. The tribal people use a wide range of herbal medicines for curing various ailments like, Abortion, Asthma, Blood Pressure, Diabetes, Diarrhoea, Dysentery, Snakebite, Malaria, Jaundice, Leucoderma, Menstrual disorders. The knowledge of these medicinal herbs was learned from their fore fathers from generation to generation. There are some herbal medicines which are not well tapped by the other local people. Out of these 44, 23 are herbs, 6 are shrubs, 7 are trees and 8 are Climbers Presented in the Table-2. The 44 medicinal plants were reported to be used in curing 34 diseases, of which 11 species for used in the part of leaves, 12 species for Root, 8 species for hole plant, 7 species for Rhizome, 6 species for seed and 2 each for flower and stem bark are using for the treatment of several ailments. Information on plant species regarding botanical name, local name, family, diseases and medicinal dosages are presented in the Figure-1. Among the different plan parts used for the preparation of medicine the roots were the most important and frequently used and majority of the remedies reported in the present study are by administering the roots. The dominant families of ethnobotanical importance are

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Apocynaceae representing 6 species, Asteraceae (5), Asclepiadaceae and Euphorbiaceae (3) Fabaceae, Combretaceae, Liliaceae, Loganiaceae, Solanaceae and Verbenaceae (2) and Amaranthaceae, Rutaceae, Mimosaceae (1) are present in the study area. The area of Pathapatnam mandal is a rich source of floral diversity with strong traditions of ethnobotanical practices existing among the ethnic community groups. The area of pathapatnam mandal is a rich source of floral diversity with strong traditions of ethno botanical practices existing among the ethnic community groups.

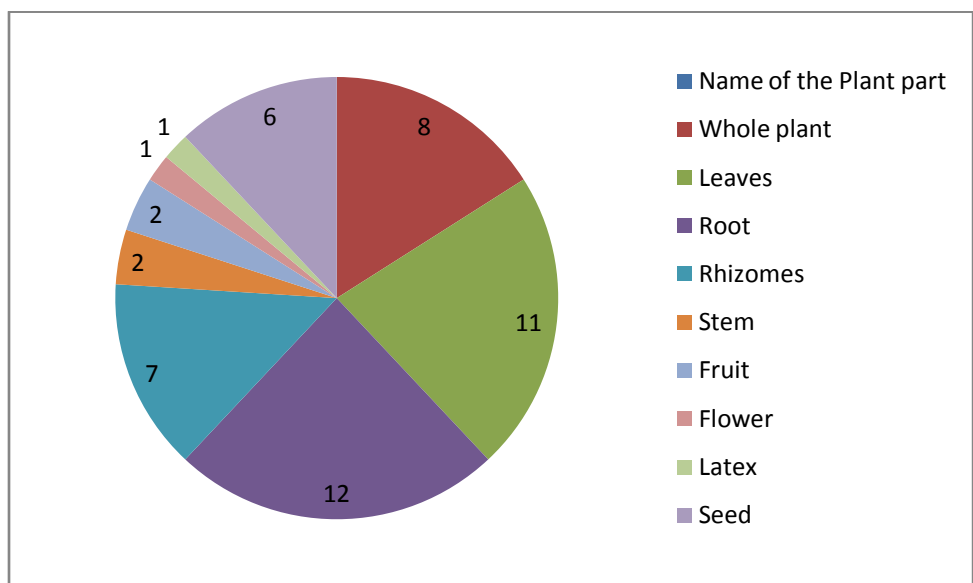


Figure 1: Plants Parts wise Ethno botanical analysis

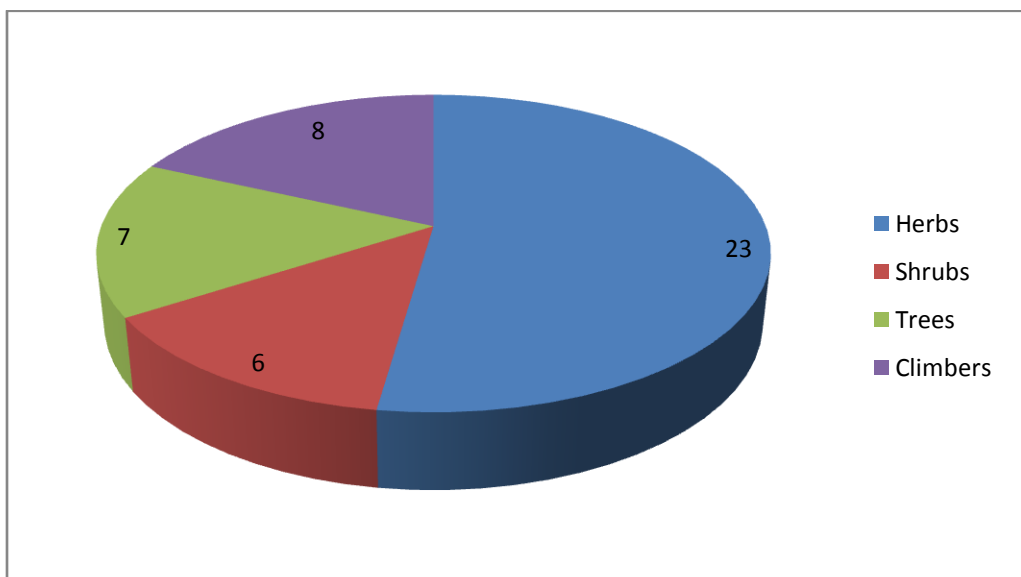


Figure 2: Habit wise Ethno botanical analysis

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Table

S.No	Name of The Diseases	Name of the Plant	Family	Common Name	Dosages
1	Abortion	<i>Abrus precatorius</i> L.	Fabaceae	Guruvinda	2 or 3 seeds are ground and the paste is mixed in a glass of water. This is administered once a day before breakfast for 3days
2	Jaundice	<i>Acalypha indica</i> L.	Euphorbiaceae	Muripindi	leaves with leaves of <i>Justicia adhatoda</i> , <i>Eclipta prostrata</i> , <i>Centella asiatica</i> , <i>Phyllanthus amarus</i> , <i>Coccinea indica</i> , and <i>Momordica charantia</i> are taken in equal quantities and ground and made into pills of soapnut seed size. One pill is administered with rice cunjee or butter milk twice a day for 3days.
3	Diabetes	<i>Aegle marmelos</i> L.	Rutaceae	Maredu	About 10ml of leaf juice is given with 5 <i>Piper nigrum</i> seeds twice a day for two months.
4	Kidney Stones	<i>Aerva lanata</i> (L.)	Amaranthaceae	Kondapindikura	10 ml of whole plant juice is given orally once a day for a period of 21 days to dissolve stones in kidneys.
5	Diabetes	<i>Andrographis paniculata</i> (Burm.f.) Wall. ex Nees	Acanthaceae	Nelavemu	Leaves powdered with leaves of <i>Syzgium jambolanum</i> , <i>Zizyphus rugosa</i> , <i>Aegle marmelos</i> , <i>Gymnema sylvestre</i> and tubers of <i>Corollocarpus epigaeus</i> (2:1 ratio) given with hot water for 20 days.

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6	Fertility	<i>Asparagus racemosus</i> Willd	Liliaceae	Pilliteegalu	: Tuberos root with of <i>Bombax ceiba</i> , tuberos root of <i>Boerhavia chinensis</i> and seeds of <i>Piper nigrum</i> are taken in equal quantities and ground. 2 spoonfuls of paste mixed in a glass of goat milk is administered early in the morning from the 3 rd day of menses for 5 days.
7	Leucorrhora	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Atikamamidi	15 ml of decoction of plant is taken orally once a day for 3days.
8	Memory	<i>Centella asiatica</i> (L.)	Apiaceae	Saraswati aku	Plant soaked in milk for 2 days ays then the leaves are taken out, dried and pound to powder. A pinch of this powder is administered daily for 1-2 months to improve memory.
9	Chicken pox	<i>Costus speciosus</i> (Koenig) Smith	Costaceae	Bokachikadumpa	Rhizome paste is applied on the body about 5 days.
10	Irregular Menstruation	<i>Curculigo orchoides</i> : Gaertn	Hypoxidaceae	Nelatadi	Tuber paste with curd is taken orally for three days.
11	Asthma	<i>Datura metal</i> L.	Solanaceae	Ummatta	Root powder is mixed with honey and is given which acts as an anti-cognizant and gives quick relief.
12	Sterility	<i>Dioscorea bulbifera</i> : L.Syn:	Dioscoreaceae	Adavi Dumpa	Tuber paste is used orally from the 4 th day of menstruation for a period of 21 days to attain sterility.
13	Hair fall	<i>Eclipta prostrata</i> (L.)	Asteraceae	Guntagalakara aku	3ml of leaf extract is given orally twice a day with cow milk for 3 months.

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	General Weakness				5ml of plant extract mixed with 3 gm fruit powder of <i>Phyllanthus emblica</i> is given orally twice a day for 6 weeks
14	Rheumatism	<i>Entada pursaetha</i> DC	Mimosaceae	Gillitavva	Seed coat made into paste and applied externally on the affected parts till cure.
15	Leucorrhoea	<i>Euphorbia hirta</i> L. Syn:	Euphorbiaceae	Pachabottulu	20 g of leaves are crushed and extract of the leaves is taken with honey once in the morning for a month.
	Dysentery				Leaves are warmed and bandaged over the affected part by applying castor oil till cure.
16	Asthma	<i>Gloriosa superba</i> : L.	Liliaceae	Adavinabi	Leaf paste is heated and applied on the forehead and neck for 7 days.
	Rheumatism				Rootstock is crushed and boiled in sesamum oil for an hour. The oil is strained and applied on joints for about a month to get rid of the pain.
17	Diabetes	<i>Gymnema sylvestre</i> : (Retz.) R. Br. Ex Schult	Asclepiadaceae	Podapatri	Leaves powdered along with leaves of <i>Aegle marmelos</i> , <i>Andrographis paniculata</i> , <i>Syzigium cumini</i> , <i>Zizyphus rugosa</i> and the tubers of <i>Carallocarpus Epigaeus</i> in 2:1 ratio. 1 spoonful of powder

					along with hot water is given twice a day for 1 week.
18	Diarrhoea Menstrual Disorders	<i>Hemidesmus indicus</i> :(L.) R. Br.	Asclepiadaceae	Sugandapala	Root ground to paste with roots of <i>Jatropha curcas</i> and <i>Holarrhena pubescens</i> two spoonfuls of the paste is administered twice a day for 3days. Roots crushed with <i>Allium sativum</i> , 2 spoonfuls of the extract is administered twice a day for 5 days.
19	Dysentery	<i>Holarrhena pubescens</i> :Wall. ex G.Don.	Apocynaceae	Palakodisa	Roots pound to paste along with the roots of <i>Jatropha curcas</i> ad <i>Hemidesmus indicus</i> , 2 spoonfuls of the paste is administered twice a day for 3days.
20	Impotency	<i>Hybanthus enneaspermus</i> :(L.)	Violaceae	Ratnapurusha	3 spoonfuls of whole plant extract is mixed with goats milk and administered once a day for 30 days.
21	Epilepsy	<i>Ichnocarpus frutescens</i> :(L.) R.Br.	Apocynaceae	Palateega	2 spoonfuls of the root filtrate with <i>curcuma longa</i> is administered twice a day till cure.
22	Cough	<i>Justicia adhatoda</i> :Medik.	Acanthaceae	Addasaram	One teaspoonful of the leaf extract is taken orally for 7 days.
23	Jaundice	<i>Phyllanthus amarus</i> Schum.	Euphorbiaceae	Nelausiri	Plant paste mixed with curd 3 spoonfuls is given orally twice a day for 7 days.
24	Peptic Ulcers	<i>Pueraria</i>	Fabaceae	Gummadi	Tuber extract mixed

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		<i>tuberosa</i> (Roxb. ex Willd.)			with little sugar and administered in doses of 2 spoonfuls twice a day till cure.
	Rheumatoid Arthritis				Tuber paste is applied over the affected parts till cure
25	Snake Bite	<i>Rauvolfia serpentina</i> (L.)	Apocynaceae	Sarpagandha	Roots crushed with the leaves of <i>Kalanchoea pinnata</i> and the extract given orally and paste applied over the bitten spot.
26	Blood Pressure	<i>Rauvolfia tetraphylla</i> L.	Apocynaceae	Papataku	6ml decoction of root bark is administered once a day for 7 days.
27	Gonorrhoea	<i>Solanum nigrum</i> L.,	Solanaceae	Kamanchi	5ml juice of whole plant is given thrice a day for 15 days.
28	Anthelminthic	<i>Sphaeranthus indicus</i> L.	Asteraceae	Bodasaramu	Seeds are pound into powder, this powder is mixed with warm water and administered one spoonful twice a day for 3days.
29	Cuts and Wounds	<i>Stachytarpheta jamaicensis</i> (Salisb.)	Verbenaceae	Jammikatulasi	Leaves ground with that of <i>Leucas cephalotes</i> and the paste is applied over the affected parts.
30	Hunting	<i>Strychnos nux-vomica</i> L.	Loganiaceae	Nuxvomica	Seed and pulp used for arrows for hunting animals.
	Dysentery				1 spoonful of stem bark extract is administered with honey twice a day for 2 days ays.

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31	Water Purification	<i>Strychnos potatorum</i> : L.	Loganiaceae	Cleaning nuts	Seed paste when mixed with turbid water, the water become clean and clear.
	Blood Pressure				Seed paste mixed with root paste of <i>Abelmoschus ficulneus</i> and <i>Cuminum cyminum</i> seeds is administered orally for 5 days
32	Asthma:	<i>Terminalia bellirica</i> (Gaertn.)	Combretaceae	Tanikaya	Fruits are ground to power with the fruits of <i>Terminalia chebula</i> , <i>Balanites aegyptiaca</i> ; roots of <i>Aristolochia indica</i> , <i>Rauwolfia serpentine</i> and <i>Syzygium aromaticum</i> . 1 spoonful of powder along with honey is given thrice a day for 30 days.
33	Cough	<i>Terminalia chebula</i> Retz.	Combretaceae	Karakaya	Fruit paste mixed with breast milk and administered orally to infants.
34	Stomach Ulcers	<i>Tinospora cordifolia</i> (Willd.)	Menispermaceae	Tippateega	3 spoonfuls of tuber extract is given orally twice a day till cure.
35	Jaundice	<i>Tribulus terrestris</i> L	Zygophyllaceae	Palleru	Equal quantities of whole plant <i>Amaranthus tricolor</i> with <i>Tribulus terrestris</i> are made into paste. Two spoonfuls of this paste mixed with cow milk is given on empty stomach for about 7 days.
36	Jaundice	<i>Tridax</i>	Asteraceae	Gaddi chamanti	Plant paste with

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		<i>procumbens</i> L.			jaggery is administered in doses of two spoonfuls per day for 7 days.
37	Dysentery	<i>Tylophora indica</i> (Burm.f.)	Asclepiadaceae	Goripala	Root pound to paste, two spoonfuls of the paste is administered twice a day for 3days.
38	Malarial Fever	<i>Vernonia cinerea</i> (L.)	Asteraceae	Saha Devi	A spoonful of root decoction mixed with 2 black pepper fruits is administered once a day for 6 days.
	Leucoderma				A spoonful of seed powder mixed with 2 black pepper fruits is administered once a day for 30 days
39	Jaundice	<i>Vitex negundo</i> L.	Verbenaceae	Vavili	Leaves crushed with leaves of <i>Acalypha indica</i> , 3 daysrops of fresh juice administered orally and 1 drop each instilled into eyes for a period of 3days.
40	Diarrhoea	<i>Woodfordia fruticosa</i> (L.)	Lythraceae	Arepuvvu	Dried flower powder is mixed with warm water and is given in doses of two spoonfuls per a day for 3days.
41	Menstrual Disorders	<i>Wrightia arborea</i>	Apocynaceae	Adavi Ankudu	Root bark ground with <i>Piper nigrum</i> and the paste made into pills, 2 pills are administered orally twice a day for 10 days.
42	Asthma	<i>Wrightia tinctoria</i> (Roxb.)	Apocynaceae	Ankudu	Latex with jaggery is taken internally in the form of pills of

	Obesity				the Bengal gram seed size twice a day for about 15 days.
					Bark along with <i>Cuminum cyminum</i> and garlic is used to reduce weight.
43	Boils	<i>Xanthium strumarium</i> L.	Asteraceae	Maraluteega	3ml of root extract is administered once a day for 2 days ays.
44	Cough	<i>Zingiber officinale</i> : Rose	Zingiberaceae	Allamu	One spoonful of the rhizome juice is mixed with an equal quantity of cow butter, is warmed and massaged on the chest and throat for 4 days before bed time.

Conclusion

Industrial development, urbanization and other development activates and podu cultivation by some tribal communities causes lot of damage to the forest areas and to the ethnobotaniocal knowledge. Therefore it is the urgent need to protect the forest and as well as ethno botanical knowledge. Both the Government and non – Government organizations should take necessary steps to conserve these ethno botanical plants which are the source of food, herbal medicine and a variety of materials for daily use of the ethnic communities. The ecosystems in which they are present by introducing *in-situ* as well as *ex-situ* conservational measures in pathapatnam Mandal. It is also suggested that an ethno botanical garden with all these ethno botanical species should be maintained in the mandal headquarters as an experimental garden.

ACKNOWLEDGEMENT

The authors are grateful thanks to the forest department of Pathapatnam range office for giving accommodation and field help in during my field survey.

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