

Research Article

BIO-PROSPECTING AND DOCUMENTATION OF TRADITIONAL MEDICINAL PLANTS USED TO TREAT ITCHING, PSORIASIS AND WOUNDS BY ETHNIC GROUPS OF KURNOOL DISTRICT, ANDHRA PRADESH, INDIA.K.P. VENKATA SUBBAIAH*¹ AND N. SAVITHRAMMA

Department of Botany, Sri Venkateswara University, Tirupati, Andhra Pradesh - 517502, India, Email: subbupandu2@gmail.com

Received: 23 December 2011, Revised and Accepted: 22 February 2012

ABSTRACT

WHO Promoting the herbal drugs because of its therapeutic potentials. The present paper aimed to document the wealth of medicinal plant species used by ethnic groups of Kurnool District to curing itching, psoriasis and wounds skin diseases. It was found that all plant parts and their extracts used to treat itching, psoriasis and wounds skin diseases. The information of plants used to treat these skin diseases from tribal people was collected and plant species were identified with the help of the floristic treatises and date was documented. The documented information was cross checked with Ayurvedic physicians. The results revealed that 21 plants species are using by people belonging to four ethnic groups. Among these 8 plant species used by Ethnic groups to treat itching, psoriasis and wounds skin diseases are also prescribed by Ayurvedic doctors. Nationally four Ayurvedic companies are preparing 18 types of drugs and releasing in the market. Remaining 13 plant species should be explored for the safety of herbal preparation to cure itching, psoriasis and wounds skin diseases. These plants represent a major source for the pharmaceutical industries in a view of their raw material. The information will draw the attention of pharmacologists and phytochemists for further critical investigations.

Keywords: Bio-prospecting, Medicinal plants, Itching, Psoriasis, Wounds, Ethnic groups.

INTRODUCTION

The relationship between man, plants and drugs derived from plants described the history of mankind. Since ancient times, people have been exploring the nature particularly plants in search of new drugs. This has resulted in the use of large number of medicinal plants which curative properties to treat various diseases¹. WHO encouraging the traditional drugs because of its less side effects and matter of low cost, easy availability hence most of the European countries expanding towards Ayurvedic medicines². Now-a-days plant based drugs are widely used and many countries contributes 40-50% of their total health budget in the production of novel drugs³.

In India, drugs of herbal origin have been used in traditional systems of medicines such as Unani, Ayurveda, Siddha⁴. India is one of the worlds 12 biodiversity centers with the presence of over 45000 different plant species. Of these, about 15,000 to 20,000 plants have gold medicinal value. Everyday new inspiring information is being added to folklore medicine for the development of drugs⁵.

Ethnic groups have staunch confidence on medicinal plants for the treatment of itching, psoriasis and wounds skin diseases. Itchy skin is characterized by an irritating and very uncomfortable sensation that makes scratching simply irritable. Psoriasis is characterized by inflammatory, red scaly condition on skin. That, affects about 2% general population world wide⁶. About 1% of people over 60 suffer from skin wounds, this disease are commonly occurred at tribal peoples lack of proper hospitalities. Despite of various studies that have been conducted on medicinal plants of Andhra Pradesh, India⁷⁻¹³. The studies on medicinal plants to treat skin disease are scanty. Hence the present study was under taken to document the traditional use of plant species to treat itching, psoriasis and wounds skin diseases.

The Kurnool Districts is one of the oldest and richest cultural traditions of using medicinal plants, which is located (14°54' and 16°11' N; and 76°58' and 78°25' E); with the total geographical area of 18,799 km² in Andhra Pradesh, India¹⁴. The study area is inhabited by the ethnic groups of Chenchu, Yerukala, Sugali (Lambadas) and Yanadi. The ethnic groups inhabited at the river bank of water streams in the forest possess fairly good knowledge about the medicinal properties of plants. Eventhough a number of reports are available on the ethnobotany of Kurnool District¹⁵⁻²¹, the detailed study on medicinal plants used to cure itching, psoriasis and wounds skin diseases are not reported so far. Therefore, an attempt has been made to record the medicinal plants used to treat itching,

psoriasis and wounds skin diseases from ethnic groups (traditional healers) and compared with Ayurvedic medicines which are available in the market. This study is most helpful of ethnobotanists, phytochemists and pharmacologists for validation and clinical studies, to explore the importance of left over medicinal plants which are only used by ethnic groups and not mentioned hitherto.

MATERIALS AND METHODS

An extensive field survey was carried out during 2008 to 2010 in the tribal belts and adjoining forest areas of Kurnool district to collect the information on medicinal plants used to treat ringworm diseases by ethnic groups Chenchu, Yerukala, Sugali and Yandi. The information was gathered on plants used to treat itching, psoriasis and wounds skin diseases mainly on plant part and time of collection from the field; preparation of medicine and type of administration of the drug. All plants mentioned by them to treat itching, psoriasis and wounds skin diseases were collected and identified with the help of the floristic treatises published by Gamble²²; Venkataraju and Pullaiah²³. The information given by ethnic groups was cross checked with Ayurvedic physicians of Sri Venkateswara Ayurvedic Hospital, Tirupati, for authentication. Ayurvedic drugs are available in the market in various brands in which 11 plants mentioned by ethnic groups were included.

Statistical analysis

The data was analyzed statistically using SPSS statistical package for WINDOWS (Version 16.0; SPSS, Inc, Chicago, USA). Chi-square test was carried out to test the association of plant part used to itching, psoriasis and wounds skin disease.

RESULTS AND DISCUSSION

From the study area documented plants claimed to have medicinal value for the treatment of itching, psoriasis and wounds skin diseases are presented in (Table-1). Scientific names of plants have been arranged alphabetically. The identified taxa are taxonomically analysed and nomenclature is updated with the help of ICBN rules²⁴. The plant species are followed by family name within the parentheses, vernacular name, disease, plant part used, preparation of medicine, form of medicine and therapeutic action are provided. The information is obtained for 21 plant species which are belonging to 21 genera of 17 families. Among the plant parts of tuber (4.76%) followed by root (9.52%), leaves (33.33%), shoot (4.76%), bark (33.33%), resin (4.76%), whole plant (4.76%) and kernel (4.76%) (Fig-1) are using in the preparation of medicine.

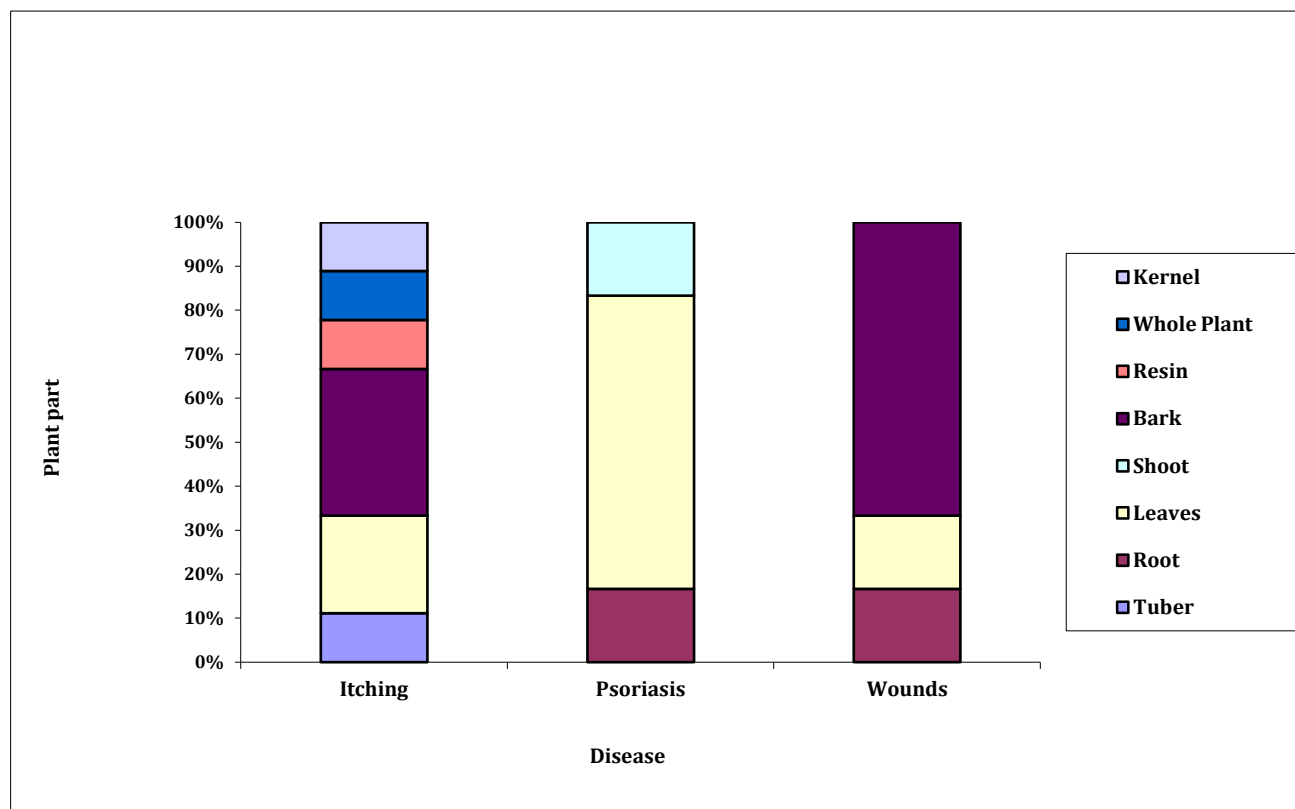


Fig.1: Different plant parts used by Ethnic groups to treat these skin diseases

Table No. 1 :List of Medicinal Plants used to treat itching, psoriasis and wounds skin diseases in Kurnool District, Andhra Pradesh, India by Ethnic Groups

S.NO	SCIENTIFIC NAME AND FAMILY	VERNACULAR NAME (TELUGU LANGUAGE)	DISEASE	PART USED	MODE OF ADMINISTRATION
1.	Anisochilus carnosus (L.f.) ex Benth.Wall. (Lamiaceae)	Karpuravali	Itching	Leaf	Fresh leaves ground and made into paste and applied as to treat itches.
2.	Buchanania lanzan Spr. (Anacardiaceae)	Sarappappu	Itching	Kernel	Kernel made into ash, mixed with latex of Jatropha glandulifera Roxb. made into paste and applied externally to treat itches.
3.	Butea monosperma (Lam) Taub. (Fabaceae)	Moduga	Itching	Bark	Fresh stem bark ground, juice rubbed over the body and kept for a full night to treat itches. This process is repeated 10-15 days.
4.	Cassia absus L. (Caesalpiniaceae)	Chanubala vittulu	Itching	Leaf	Fresh leaves (50 g) mixed with zinger (50 g), made into decoction and 50 ml is given orally for twice a day for a week to treat itches.
5.	Chloroxylon swietenia DC. (Flindersiaceae)	Billudu	Itching	Bark	Dried stem bark (5 g) ground, mixed with sesamam oil and made into paste is used as an external application to treat itches.
6.	Cochlospermum religiosum(L.)Alston. (Cochlospermaceae)	Konda gogu	Itching	Resin	Fresh resin used as an external application to treat itchy infections.
7.	Curculigo orchoides Gaerton. (Hypoxidaceae)	Nelatadi	Itching	Root tuber	Fresh root tubers ground, made into paste and applied externally to treat itches.
8.	Dendrophthoe falcata (L.f.) Ett.(Loranthaceae)	Bhajanika	Wounds	Bark	Bark and stem dried, ground and power is used as an external application to cure wounds.
9.	Elytraria acaulis(L.f.) Lindace.(Acanthaceae)	Yeddu adugu	Wounds	Leaf	Fresh leaves ground and past is used as an external application to cure wounds.
10.	Erythroxyllum monogynum Roxb. (Erythroxyllaceae)	Devadaru	Itching	Bark	Stem bark ground and boiled the decoction (50 ml) given orally at morning time an empty stomach for four weeks to treat itches.
11.	Lanea coromandelica.	Gumpena	Wounds	Bark	Resin, obtained from stem bark, mixed

	(Houtt)Mann.(Anacardiaceae)						with cow's urine and applied as on ointment.
12.	Lepidagathis cristata Willd. (Acanthaceae)		Nakkapentika gadda	Itching	Whole plant		Whole plant ground, powder mixed with coconut oil, applied externally to treat itchy infections.
13.	Moringa concansis Nimmo.ex.Dalz. and Gibs (Moringaceae)		Adavimunaga	Wounds	Bark		Fresh stem bark made into paste and applied as plaster to cure wounds.
14.	Ola scandens Roxb. (Olacaceae)		Murikimalle	Psoriasis	Leaf		Dried leaves mixed with Holarrhena pubescens (Buch. Ham) Wall ex Don. fresh leaves and boiled, the decoction is given 20ml daily in the early morning for 20 days to treat psoriasis.
15.	Pedaliium murex L. (Pedaliaceae)		Enugu palleru	Psoriasis	Leaf		Leaf paste applied as poultice on white spots to treat psoriasis.
16.	Phyllanthus reticulatus Poir. In. Lam (Euphorbiaceae)		Pulicheru	Psoriasis	Leaf		Dried leaves made into powder, mixed with Ricinus communis L. oil and applied externally to treat psoriatic infection.
17.	Rhinacanthus nasutus (L.)Kurz. (Acanthaceae)		Nagamalle	Psoriasis	Leaf		Fresh leaves ground, made into paste and applied on infected spots, to cure psoriasis.
18.	Rhus mysorensis G. Don (Anacardiaceae)		Sundara kampa	Psoriasis	Shoot		Young shoots made into paste, and applied externally on spots to treat psoriasis.
19.	Sida cordifolia L. (Malvaceae)		Chirubenda	Wounds	Root		Fresh roots ground and juice applied externally to cure wounds.
20.	Solanum pubescens Willd. (Solanaceae)		Tellarama molaka	Psoriasis	Root		Root ground in milk or cow's urine and the paste applied externally for 20 days to treat psoriasis.
21.	Wrightia tinctoria R.Br. (Apocynaceae)		Reppala	Wounds	Bark		Bark powder mixed with gingelly oil made into paste and applied externally to cure wounds.

Ayurvedic physicians of Sri Venkateswara Ayurvedic Hospital are prescribing the medicine to treat itching, psoriasis and wounds skin diseases by using 8 different forms of drugs like Arista, Churna, Capsule, Lehya, Thailams, Oils, Savam, Yanakam, Pills, Syrup, Ghrita, Gudam, Vati and Rasayana (Table-2). The total 21 plants species mentioned by ethnic groups to treat itching, psoriasis and wounds skin diseases 8 plants species are including in the preparation of 18 types of Ayurvedic drugs. These 18 types of Ayurvedic drugs in different trade names Kiratarista, Whitenil powder, RG-Tab, Amrutabhallataka lehya, Neelithailum, Kesini oils, Surasa savam, Bhalakatiak vati etc., (Table-2) are releasing in the market by four Ayurvedic companies (manufactures) after clinical trails and getting approved from the Department Drug Control of India.

However remaining 13 plant species are purely used by ethnic groups only. The results reveled that there is a significant association between itching, psoriasis and wounds skin diseases and plant part (Table-3), ('p' value is $0.003 < 0.01$ for the corresponding Chi-square value is 55.243) highly significant.

CONCLUSION

The traditional knowledge on the properties of plants and their uses to treat itching, psoriasis and wounds skin diseases are increasingly

being put to the practice of Ayurvedic medicine. Among 21 plants used by ethnic groups of Kurnool district for treating itching, psoriasis and wounds skin diseases only 8 plant species has been known to public, remaining 13 plant species should be explored for herbal preparation to cure for itching, psoriasis and wounds skin diseases. Otherwise this traditional knowledge will slowly disappear due to lack of proper documentation and awareness. These plants represent a major source for the pharmaceutical industries in view of their raw material. Modern medical facilities are now making a rapid penetration into tribal villages, which may result in the disappearance of the herbal wealth. It is hoped the remaining 13 plants species that this study will draw the attention of ethnobotanists, phytochemists and pharmacologists for further critical investigations.

ACKNOWLEDGEMENTS

The authors are highly grateful to ethnic groups who shared their knowledge of plants for treating itching, psoriasis and wounds skin diseases and locating the plants in the field. Our thanks to Ayurvedic physicians Dr. B. Gnana Prasuna, Dr. B. Harinathachary, Dr. H. Datthathreya of Sri Venkateswara Ayurvedic Hospitals, Tirupati, for their valuable discussions and clinical information.

Table 2: Medicinal plants used by ethnic groups and also listed in the preparation of Ayurvedic Drugs (Popular brands released nationally in the market) to treat itching, psoriasis and wounds skin diseases

S.No.	Scientific name	Form of drug																		Total
		Arista's		Chrurna		CAP/TABL ET		Lehya		Thailams		Oils		Savam		Vati				
		SA D (24) d	KI R (6) d	PA N (6) d	W. P (4) c	T. C. (3) d	H.T. (10) a	R.G. (7) a	AL (22) d	PA L (27) d	KT (16) b	NT (14) b	ST (22) b	V. O (5) c	W. O (4) a	K. O (5) b	M S. (9) b	S.S. (17) b	B. V (3) d	
1	<i>Butea monosperma</i>	-	1	-	-	-	-	-	1	-	-	1	-	-	1	-	1	-	5	
2	<i>Cassia absus</i>	-	-	-	-	-	1	-	1	-	-	1	-	-	-	1	-	1	5	
3	<i>Chloroxylon swietenia</i>	-	-	1	-	1	-	-	-	-	-	-	-	1	-	-	-	-	3	
4	<i>Pedaliu murex</i>	1	-	-	-	-	1	-	1	-	1	-	-	-	-	1	-	-	5	
5	<i>Phyllanthus reticulatus</i>	-	1	-	1	-	-	-	-	1	-	-	-	1	1	1	-	1	7	
6	<i>Solanum Pubescens</i>	1	-	-	-	-	-	1	-	-	1	-	-	1	-	-	1	-	5	
7	<i>Sidacardi folia</i>	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	1	4	
8	<i>Wrightia tinctoria</i>	-	-	-	1	-	-	-	-	-	-	1	1	-	-	1	-	-	4	
Total		3	2	1	2	1	2	2	2	3	2	1	2	1	3	2	4	2	3	38

m	: Saribadadyarista	RG	: RG-Tab	VO	: Visera oil	a, b, c & d are manufacturer of the drug
KIR	: Kiratarista	AL	: Amrutabhallatika lehya	WO	: Winsoria oil	a: Kerala Ayurvedic Ltd., Athani, Alura, Kochi, Kerala-683585, India
PAN	: Panchatkarista	PAL	: Palasugandha lehya	KO	: Kesini Oil	b: Viadaryatnam Oshadhasala, Olluru, Thrissur, Kerala-683585, India
WP	: Whitenil powder	KT	: Karappam Thialm	MS	: Moolakasavam	c: Fours Lab, Achayanagar, Hyderabad-500044, Andhra Pradesh, India
TC	: Triphala Churna	NT	: Neelithailam	SS	: Surasa Savam	
HT	: Hinstantim P-tab	ST	: Satnadhara Thailam	BV	: Bhalakatika vati	d: Imi's Pharmaceuticals Pvt. Ltd., Seetharamapuram, Vijayawada-50002, India

The number in the peranthesis indicates total number of ingredients present in the formulation

Table 3: summary of chi-square test

PLANT PART	DISEASE			TOTAL
	ITCHING	PSORIASIS	WOUNDS	
TUBER	1	-	-	1
	4.76%	0	0	4.76%
ROOT	-	1	1	2
	0	4.76%	4.76%	9.52%
LEAVES	2	4	1	7

	9.52%	19.04%	4.76%	33.33%
SHOOT	-	1	-	1
	0	4.76%	0	4.76%
BARK	3	-	4	7
	14.28%	0	19.04%	33.33%
RESIN	1	-	-	1
	4.76%	0	0	4.76%
WHOLE PLANT	1	-	-	1
	4.76%	0	0	4.76%
KERNEL	1	-	-	1
	4.76%	0	0	4.76%
TOTAL	42.85	28.57	28.57	100%

REFERENCES

- Verpoorte R. Chemodiversity and the Biological Role of secondary metabolites, same thoughts for selecting plant material for drug development. Proc Phytochem Soc Europe 1998; 43: 11-24.
- WHO. General guidelines for methodologies as research and evaluation of traditional medicine, Geneva, Switzerland, 2000; 71.
- Sati SC, Sati N, Rawat U, Sati OP. Medicinal plants as a source of antioxidants. Res J Phytochems 2010; 4: 213-224.
- Satyavathi GV, Gupta AK, Tandan N. Medicinal plants of India, Indian council of Medical Research, New Delhi, India, 1987.
- Cox P, Black M. The Ethnobotanical approaches to drug discovery. Sci Am 1994; 82-87.
- Michelle EA, Elke MG, Peter CM. Efficacy and safety of treatments for child-hood psoriasis: A systematic literature review. J Am Acade Dermatol 2010; 62 (6): 1013-1030.
- Jeevanram A, Adinarayanareddy P, Venkataraju RR. The medico-botanical studies on crude drugs for skin diseases used by tribals from Eastern Ghats of Andhra Pradesh, India. Biodiversity Taxonomy and conservation of flowering plants 1999; 337-347.
- Savithamma N, Rao KN. Biodiversity in medicinal plants health of Sriharikota, Andhra Pradesh, ISEP-21, 2001; 9: 811-815.
- Savithamma N. Diversity and conservation of medicinal plants of Seshachalam hill range of Andhra Pradesh. Bull Bot Surv India 2004; 46: 438-453.
- Savithamma N and Sulochana. Endemic medicinal plants from Tirumala Hills Andhra Pradesh. Fitoterapia 1998; LXIX (3): 253-254.
- Savithamma N and Sudharshanamma D. Endemic medical plant of Eastern Ghats, India. The Bioscan 2006; 1 (1-4): 51-53.
- Venkataratnam K, Venkataraju RR. Traditional Medicine used by the Adivasis of Eastern Ghats of Andhra Pradesh – for bone fractures. Ethnobotanical leaflets 2008; 12: 19-22.
- Rout SD, Panda T, Mishra N. Ethno-medicinal plants used to cure different disease by Tribals of Mayurbhanj District of North Orissa. Ethno-med 2001; 3(1): 27-32.
- Anonymous. Hand book of Statistics, Chief Planning Officer, Kurnool, Andhra Pradesh, India 1995.
- Ellis JL. Wild Plant resources of Nallamala on the Eastern Ghats of India, A preliminary list. Bull Bot Surv India 1982; 10: 140-160.
- Saiprasadgoud, Pullaiah T. Folk Veterinary medicinal plants of Kurnool District, Andhra Pradesh, India. Ethnobot 1996; 8:71-74.
- Jeevanram A, Venkataraju RR. Certain potential crude drugs used by tribals of Nallamala, Andhra Pradesh, for skin diseases. Ethnobotany 2001; 13(12): 110-115.
- Ramachandrareddy P, Padmarao P, Prabhakar M. Ethnomedicinal practices amongst Chenchus of Nagarjuna sagar Srisailem Tiger Reserve (NSTR), Andhra Pradesh – Plant remedies for cuts, wounds and boils. Ethnobot 2003; 15:67-70.
- Venkataratnam K, Venkataraju RR. Folk medicine from Gandla brahmeswaram wild life sanctuary, Andhra Pradesh, India. Ethnobot, 2004; 16: 33-39.
- Venkataratnam K, Venkataraju RR. Folk Medicine used for common women ailments by adivasis in the Eastern Ghats of Andhra Pradesh, India. J Trad Knowledge 2005; 4: 267-270.
- Goud S and Pullaiah T. Ethno-botany of Kurnool District: some wild plants used as food. J Eco Tax Bot 1996; 12: 224-227.
- Gamble JS. Flora of the presidency of Madras, Vol.1-3, Authority of the Secretary of State for India in Council, Dehra Dun, India 1936; 5: 1597.
- Venkataraju RR, Pullaiah T. Flora of Kurnool. Bishensingh Mahendrapal Sing, Dehra Dun, 1995.
- Greuter W. International Code of Botanical Nomenclature, Adopted at the fourteenth international botanical congress, Berlin, July-August, Konigstein, Koentz Scientific Books, 1988, 328.