

Ethnomedicinal Uses of Climbers and Woody Lianas Species in Alluri Sitarama Raju District, Andhra Pradesh, India

M. Eswara Lakshmi Kumari¹, V. Surya Ramani¹, N. Nageswara Rao¹, S. B. Padal^{1*}

¹Department of Botany, Andhra University, Visakhapatnam-530003, A. P, India

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*Corresponding author: S. B. Padal

Department of Botany, Andhra University, Visakhapatnam-530003, A. P, India

Abstract

Original Research Article

The present study focused on the ethnomedicinal uses of climbers and woody lianas species in Chintapalli Mandal, Alluri sitarama Raju district, Andhra Pradesh, India. A total of 60 climbing and woody lianas species belonging to 48 genera and 25 families were recorded in the ten study plots. Out of 25 families with regard to the number of species found within families, Apocynaceae was the most diverse climbing and woody lianas family in samples being represented by 13 species, followed by Convolvulaceae with (10 species), Fabaceae with (5 species), Vitaceae and Dioscoreaceae with (4 species). Four families Aristolochiaceae, Cucurbitaceae, Rhamnaceae and Smilacaceae with (2 species). Sixteen Families were represented by single species. Lianas are even rich in the field of ethnomedicine having diverse group of active biomolecules.

Keywords: Ethnomedicine, Climbers and woody lianas species, Alluri Sitarama Raju District.

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INTRODUCTION

Lianas, or woody vines, are important structural components of tropical forests as well as non-timber forest products (NTFP) used for multiple purposes around the world [1]. Climbers and lianas, also collectively called 'vines', are treated as a special type of life form class since they depend for their support on other self supporting plants or artificial props. Woody climbers are called lianas. Lianas and climbers represent a very conspicuous and dominant growth form in tropical forests. The ecological importance of lianas is well documented, since they are of fundamental importance in the functioning of ecosystems as competing with trees either directly or indirectly. They act as key ecological components of whole forest in transpiration, carbon sequestration and forest regeneration [2]. Lianas are capable of growing very rapidly in length and large lianas generally grow to the canopy casting shadow on their host trees, thereby reducing their photosynthesis and consequent growth rates [3]. Although by growing from tree to tree, lianas might increase tree stability, trees with lianas suffer higher mortality rates than liana free trees [4]. Lianas are suggested to have a key role in the adaptation of vertebrate locomotors in the tropical forests of Africa, Asia, and Neotropics [5]. The harvesting of NTFPs has been a matter of concern in economic and biodiversity

conservation arenas [6]. Lianas are the important resources for the local communities providing medicine, food, artisan work, construction material of traditional house, hunting tools. Lianas may be especially important in remote areas where regular "modern" western medicines and various other products are not easily available and accessible [7]. Lianas play important role for not only human beings but also for insects, birds and arboreal animals i.e. monkeys as a food plant especially other food sources are scarce in dry season [8-11]. Therefore the reliance on the forest by indigenous peoples is often mentioned as a reason for conservation of forest. The aim of the present study was ethnomedicinal significance of climbing and woody lianas species in the study area.

MATERIAL AND METHODOLOGY

Study area

Chinthapalli Mandal located on the north-eastern part of Alluri Sitarama Raju District, it lies between 17° 44' 22" North latitude to 18° 04' 29" North and 82° 16' 00" East to 82° 38' 04" East. In this area the primitive tribal people like Khondu, Mali, Konda Dora, Valmiki, Nuka Dora and Gadaba people were residing in interior pockets of this Mandal, they depended for their healthcare on wild medicinal plants.

METHODOLOGY

The present study was carried out through extensive field visits during April 2021- to May 2022 and collected information on traditional uses of lianas used in preparation of crude herbal by the tribal people living in the Chintapalli Mandal, Alluri sitarama Raju District, Andhra Pradesh. A random questionnaire was conducted. The information listed in tabular form including the plant name. The plants were identified with standard floras and voucher specimen deposited in the Botany Herbarium, Andhra University, Visakhapatnam.

RESULT AND DISCUSSION

A total of 60 climbing and woody lianas species belonging to 48 genera and 25 families were recorded in the ten study plots. Out of 25 families with regard to the number of species found within families, Apocynaceae was the most diverse climbing and woody lianas family in samples being represented by 13 species, followed by Convolvulaceae with (10 species), Fabaceae with (5 species), Vitaceae and Dioscoreaceae with (4 species). Four families Aristolochiaceae, Cucurbitaceae, Rhamnaceae and Smilacaceae with (2 species). Sixteen

Families were represented by single species Acanthaceae, Annonaceae, Asparagaceae, Basellaceae, Caesalpiniaceae, Celastraceae, Combretaceae, Euphorbiaceae, Malphigiaceae, Menispermaceae, Oleaceae, Passifloraceae, Periplocaceae, Ranunculaceae, Sapindaceae and Stemonaceae. Out of 60 species of climbers and woody lianas species the twining plants were greatly stem climbers represented by 38 species followed by Twinner lianas 8 species, Tendril climbers were 6 species, Scramblers were 3 species, Branch climber 1 species, Hook climber 1 species, Petiole climber 1 species, Tendril climbing liana 1 species and Watch-spring climbers 1 species. (Fig 1) which were used by rural communities for fulfilling their daily life needs.

The name of the plant parts in different plant species are used out of 60 plant species. Leaves 20 species followed by Root 11 species, whole plant 9 species, Stem and tubers each one have 8 species, Fruit 2 species and Bark and seed 1 species (Fig. 2). Which are used for ethnobotanical exploration.

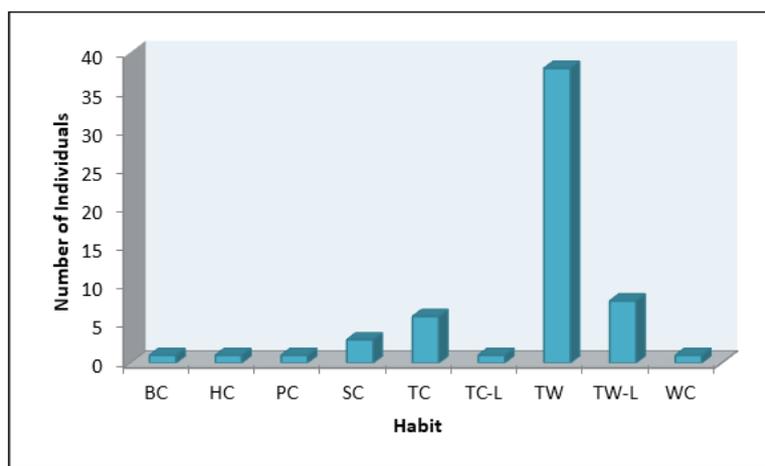


Fig 1: Habit wise analysis of Climbers and woody lianas species

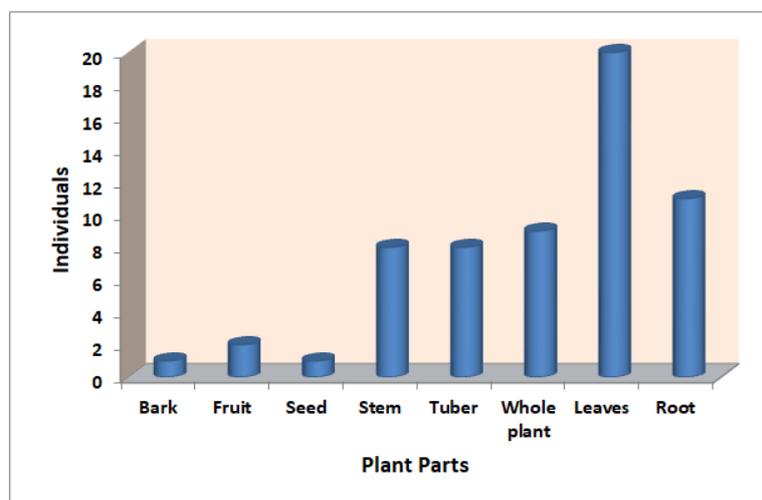


Fig 2: Plant Parts wise uses of Ethnomedicinal climber and Woody lianas species

Table 1: Climbers and woody lianas species and their ethnomedicinal uses in the Study area

S. No	Plant name	Family	Vernacular name	Ethnomedicinal uses of Parts	Habit
1	<i>Ampelocissus latifolia</i>	Vitaceae	Dobba teega	Stem: anorexia	TC
2	<i>Anodendron paniculatum</i>	Apocynaceae	Atukudu teega	Bark: bone fracture	TW-L
3	<i>Argyreia nervosa</i>	Convolvulaceae	Samudra pala	Stem: wounds; leaf: skin ailments	TW-L
4	<i>Aristolochia bracteolata</i>	Aristolochiaceae	Nalleswari	Whole plant: purgative, Snake bite	TW
5	<i>Aristolochia indica</i>	Aristolochiaceae	Gadida gadapa	Root: snake-bite	TW
6	<i>Artabotrys hexapetalus</i>	Annonaceae	Teega sampangi	Leaf: fertility; flowers scented	HC
7	<i>Asparagus racemosus</i>	Asparagaceae	Pilli teegalalu	Tuber: aphrodisiac	TW
8	<i>Basella alba</i>	Basellaceae	Batchali	Leaf: vegetable	TW
9	<i>Bauhinia vahlii</i>	Caesalpiniaceae	Addaku	Leaves: meal plates; young fruits: eaten, vegetable	TW-L
10	<i>Butea superba</i>	Papilionaceae	Teega moduga	Seed: abortifacient	TW
11	<i>Cajanus scarabaeoides</i>	Papilionaceae	Adavi kandi	Whole plant: manure	TW
12	<i>Cardiospermum halicacabum</i>	Sapindaceae	Chinna budda kashe	Leaf: piles	WC
13	<i>Cayratia pedata</i>	Vitaceae	Edakula mandulamari	Leaf: venereal diseases	TC-L
14	<i>Celastrus paniculatus</i>	Celastraceae	Malleru teega	Stem bark: abortifacient	SC
15	<i>Cissus quadrangularis</i>	Vitaceae	Nalleru	Stem: bone fracture	TC
16	<i>Cissus vitiginea</i>	Vitaceae	Adavi draksha	Stem bark: wounds	TC
17	<i>Combretum albidum</i>	Combretaceae	Bontha teega	Root bark: veterinary (wounds)	TW-L
18	<i>Cryptolepis buchananii</i>	Periplocaceae	Budda pala teega	Root: veterinary (galactogogue)	TW
19	<i>Cryptostegia grandiflora</i>	Apocynaceae	Rubberu teega	Leaf: toxic	TW
20	<i>Cuscuta chinensis</i>	Convolvulaceae	Pashi teega	Whole plant: galactogogue	TW
21	<i>Decalepis hamiltonii</i>	Apocynaceae	Maredu gadda	Tuberous root: prickled, made surbath, tonic	TW-L
22	<i>Dioscorea alata</i>	Dioscoreaceae	Bellam gadda	Tuber: vegetable	TW
23	<i>Dioscorea bulbifera</i>	Dioscoreaceae	Chenna gadda	Tuber: vegetable; sexual vigour	TW
24	<i>Dioscorea hispida</i>	Dioscoreaceae	Magasiri gadda	Tuber: vegetable; sexual vigour	TW
25	<i>Dioscorea pentaphylla</i>	Dioscoreaceae	Govinda gadda	Tuber: vegetable; indigestion	TW
26	<i>Diplocyclos palmatus</i>	Cucurbitaceae	Linga donda	Leaf: rheumatism; fruit: diarrhoea	TC
27	<i>Dregea volubilis</i>	Apocynaceae	Bandi gurija	Leaf: rheumatism, snake-bite	TW-L
28	<i>Gymnema sylvestre</i>	Apocynaceae	Poda patri	Leaf powder: diabetes	TW
29	<i>Hemidesmus indicus</i>	Apocynaceae	Sugandhi pala	Root: tonic, cooling	TW
30	<i>Hiptage benghalensis</i>	Malphiaceae	Madhavi lata	Leaf: fodder	TW-L
31	<i>Holostemma ada-kodien</i>	Apocynaceae	Pala gurugu	Root: mouth ulcers	TW
32	<i>Ichnocarpus frutescens</i>	Apocynaceae	Nalla teega	Root: diabetes	TW
33	<i>Ipomoea hederifolia</i>	Convolvulaceae	Kasiratnamu	Root: tonic	TW
34	<i>Ipomoea nil</i>	Convolvulaceae	Kolli teega	Whole plant: ulcers; flowers: worship	TW
35	<i>Ipomoea pes-caprae</i>	Convolvulaceae	Balabandhi teega	Leaf: rheumatism	TW
36	<i>Ipomoea pes-tigridis</i>	Convolvulaceae	Puli adugu teega	Whole young plant: fodder	TW
37	<i>Ipomoea quamoclit</i>	Convolvulaceae	Tarulata	Leaf: hemorrhoids	TW
38	<i>Ipomoea sepiaria</i>	Convolvulaceae	Puriti teega	Whole plant: fodder	TW
39	<i>Jasminum auriculatum</i>	Oleaceae	Mollalu, adavimalle	Leaf: tympany	TW-L
40	<i>Leptadenia reticulata</i>	Apocynaceae	Mukku tummu teega	Whole plant: aphrodisiac	TW
41	<i>Macroptilium atropurpureum</i>	Papilionaceae	Gulabi chikkudu	Pasture plant	TW
42	<i>Milletia racemosa</i>	Papilionaceae	Nela tangedu	Stem bark: fever	TW
43	<i>Mucuna pruriens var. hirsuta</i>	Papilionaceae	Dula dundi	Root: skin disease	TW
44	<i>Naravelia zeylanica</i>	Ranunculaceae	Pulla batchali	Leaf: cooling agent	PC
45	<i>Operculina turpethum</i>	Convolvulaceae	Tagada	Whole plant: purgative	TW
46	<i>Passiflora foetida</i>	Passifloraceae	Pasi jumiki	Leaf: head-ache	TC
47	<i>Pergularia daemia</i>	Apocynaceae	Dustapu teega	Leaf: stomach ache	TW
48	<i>Rivea hypocrateriformis</i>	Convolvulaceae	Boddi kura	Root: snake bite	TW
49	<i>Sarcostemma acidum</i>	Apocynaceae	Pulla kaadalu	Whole plant: burns; bone fracture	BC
50	<i>Secamone emetica</i>	Apocynaceae	Konda pala	Fruit: emetic	TW
51	<i>Smilax perfoliata</i>	Smilacaceae	Nageti dumpa	Tuber: abortifacient	TW
52	<i>Smilax zeylanica</i>	Smilacaceae	Firangi mokka	Root: leucorrhoea	TW
53	<i>Stemona tuberosa</i>	Stemonaceae	Kanepu teega	Tuber: fever	TW
54	<i>Thunbergia alata</i>	Acanthaceae	pula teega	Leaf: bone fracture, head ache	TW
55	<i>Tinospora cordifolia</i>	Menispermaceae	Tippa teega	Root: cardiac stimulant; whole plant: snake bite	TW
56	<i>Tragia involucrata</i>	Euphorbiaceae	Doola gondi	Leaf: stomach pain due to Nematodes	TW
57	<i>Trichosanthes tricuspidata</i>	Cucurbitaceae	Avva pandu	Fruit: ear-ache	TC
58	<i>Tylophora indica</i>	Apocynaceae	Mekameyani aku	Stem: urinary troubles; leaf: asthma	TW
59	<i>Ventilago denticulata</i>	Rhamnaceae	Surati chekka	Leaf: skin disease	SC
60	<i>Ventilago maderaspatana</i>	Rhamnaceae	Gali vana teega	Stem bark: aphrodisiac	SC

Scramblers (SC), Root climbers (RC), Twiners (TW), Tendril climbers (TC), Petiole climbers (PC), Branch climbers (BC), Hook climbers (HC), Watch-spring climbers (WC).

Climbers are used by local people in many different ways. The principle uses of lianas viz. medicine, food, artisan work, construction of traditional

houses, etc. It is clear that climbers are an important resource for local communities, particularly for medicinal reasons. The climbing and lianas plants used

for different ailments like burns; bone fracture, cooling agent, abortifacient, skin disease, aphrodisiac, anorexia, wounds, diarrhoea, head-ache, ear-ache, venereal diseases, purgative, Snake bite, veterinary (galactagogue), sexual vigour, diabetes, mouth ulcers, haemorrhoids, piles and asthma. The most commonly used medicinal climbers were recorded from the study area viz. *Artabotrys hexapetalus*, *Celastrus paniculatus*, *Diplocyclos palmatus*, *Aristolochia bracteolata*, *Aristolochia indica*, *Dioscorea alata*, *Dioscorea bulbifera*, *Tinospora cordifolia*, *Tragia involucrate*, *Dregea volubilis*, *Cardiospermum halicacabum* etc.,. Many researchers also have done some works on lianas. In 2014, Darlong and Bhattacharyya reported the lianas of Tripura [12]. In 2015, Krishnamani reported some lianas in Western Ghats of India like *Entada rheedii*, *Gnetum ula*, *Erycibe paniculata*, *Hiptage benghalensis*, *Olax scandens*, *Schefflera venulosa* and *Spatholobus parviflorus* [13]. In 2015, Barik *et al.*, reported diversity of lianas in Eastern Himalayas and Northeastern India like *Argyrea nervosa*, *Phanera vahlii*, *Cayratia pedata* and *Gouania leptostachya* [14].

CONCLUSIONS

Diversity of the medicinally important lianas is very rich across the Alluri Sitarama Raju District. This information focused on medicinally important lianas distributed widely in the district so guidelines should be developed for the management of the medicinal lianas, aimed at sustainable use of valuable recourses. Present work gives further insights for the determination of biological activities of lianas used in traditional medicines. This provides an excellent platform towards the novel drug preparations for various ailments and this would indirectly help to improve the economy of tribal communities and informal settlements.

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