



## RESEARCH ARTICLE

### AN ETHNO-MEDICINAL SURVEY OF MEDICINAL PLANTS USED BY TRADITIONAL HEALERS OF ARAKU VALLEY, ANDHRA PRADESH, INDIA

Rohini Ijjirouthu, B., Hamsaveni, N., \*Sujeet Kumar, Bhavya, C. and Suresh Kumar, K.

Department of Plant Biotechnology, UAS, GKVK, Bangalore 560065

#### ARTICLE INFO

##### Article History:

Received 04<sup>th</sup> January, 2017

Received in revised form

28<sup>th</sup> February, 2017

Accepted 22<sup>nd</sup> March, 2017

Published online 20<sup>th</sup> April, 2017

##### Key words:

Traditional healers,  
Ethnobotanical,  
Ailment,  
Visakhapatnam,  
Araku.

#### ABSTRACT

The present ethnobotanical exploration study presents the folk medicinal plants used by certain tribes (Kondadoras) in Visakhapatnam district of Andhra Pradesh in India. As the valuable source of knowledge on traditional medicinal plants usage is not adequately documented, this study impedes their widespread use and validation. Here we have recorded indigenous knowledge and standard practices for human disease control of these tribes. A cross sectional study was carried out using semi-structured questionnaire to document knowledge of 49 traditional healers (40 male and 9 female) in medicinal plant use for treatment of human ailments. 226 plant species claimed medicinal properties against major human ailments and botanically belongs to 78 families. Most of the plant species reported belongs to one of these major families: *Solanaceae*, *Fabaceae*, *Asteraceae*, *Malvaceae*, *Moraceae*, *Apocynaceae* and *Amaranthaceae*. They majorly use herbs (44 %), trees (27 %) and shrubs (19 %) for preparing medicine. Leaves (31 %) and roots (17 %) were the major plant parts used in this study area. This study showed that traditional medicinal plants play a significant role in meeting the primary healthcare needs of the ethnic groups. Collected information from traditional healers can be used for further study.

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Citation: Rohini Ijjirouthu, B., Hamsaveni, N., Sujeet Kumar, Bhavya, C. and Suresh Kumar, K. 2017. "An ethno-medicinal survey of medicinal plants used by traditional healers of Araku valley, Andhra Pradesh, India", *International Journal of Current Research*, 9, (04), 48633-48645

## INTRODUCTION

The application of traditional medicine and medicinal plants has expanded globally. It has gained extensive popularity and now has become a crucial part of human health care. The ethnic people residing in different geographical belts of India depends on wild plants to meet their basic requirements and all ethnic communities have their own pool of secret ethno medicinal and ethno pharmacological knowledge about the plants available in their surroundings (Muthukumara swamy *et al.*, 2003; Rana *et al.*, 2010; Rajendran *et al.*, 2002; Jain, 2001). Traditional medicines have been used by Indian people since many centuries and the use of plants for medicinal treatment dates back to 5000 years (Sofowora, 1982) even, from Vedic ages, Rigveda mention 67 plants have therapeutic effects, Yajurveda lists 81 plants and Atharvanaveda 290 plants (Nabachandra Singh *et al.*, 1992). It was officially recognized that 2500 plant species have medicinal value while over 6000 plants are estimated to be explored in traditional, folk and herbal medicine (Huxley, 1984). The medicinal plants find application in pharmaceutical, cosmetic, agricultural and food industry. The medicinal herbs usage for curing disease has been documented in history of all civilizations. Man in the pre-

historic era was probably not aware about the health hazards associated with irrational therapy. With the onset of research in medicine, it was concluded that plants contain active principles, which are responsible, for curative action of the herbs. The plant-based traditional medical systems continue to provide the primary health care to more than three quarters of the world's population. The World Health Organization (WHO) has also estimated that over 80% of the global population relies chiefly on traditional medicine (Akerele, 1992). India has rich diversity of medicinal plants. The supply base of 90% herbal raw drugs used in the manufacture of Ayurveda, Siddha, Unani & Homoeopathy systems of medicine is largely from the wild habitat. This wild source is speedily shrinking day-by day.

Therefore, there is a need for conservation and sustainable use of medicinal plants. It is hoped that, in the future, ethno botany may play an increasingly important role in sustainable development and biodiversity conservation (Rajasekaran and Warren, 1994). The key threats for medicinal plants are due to over dependency by local people, grazing, forest fires and commercial activities. The local people depend upon these plants are due to the effective nature, non-availability of medical facilities and ethno cultural beliefs. Cultivation is clearly a sustainable alternative to the present collection of medicinal plants from the wild habitat. Cultivation of medicinal plants can be a potential provider of returns to the farmers,

\*Corresponding author: Sujeet Kumar,

Department of Plant Biotechnology, UAS, GKVK, Bangalore 560065.

since even recent times, plants have been important source of modern drugs like aspirin, ephedrine, dioxin, quinine, tubocurarine to name only few (Gilani and Rahman, 2005). The drug obtained from plants is believed to be much safer and exhibits a remarkable efficacy in the treatment of various ailments (Siddiqui *et al.*, 1995). It has been noted that original source of many important pharmaceuticals in current use have been plants used by indigenous people (Balick and Cox, 1996) who traditionally has been a rich source of knowledge on medicinal plants. Due to changing life style, extreme secrecy of traditional healers and negligence of youngsters the practice and dependence of ethnic societies for traditional medicine is in rapid decline globally therefore ethnobotanical exploitation and documentation of indigenous knowledge usefulness of such a vast pool of genetic resources is deliberately needed (Viswanathan, 2004; Saikia *et al.*, 2003; Kumar *et al.*, 2003; Singh, 2004) So to preserve this knowledge about medicinal plants this ethno botanical survey in Eastern ghats was done.

## MATERIALS AND METHODS

### Study area

Araku valley is a hill station on the Eastern Ghats in the district of Visakhapatnam in the state of Andhra Pradesh in India. It is inhabited by different tribes. Araku is located at 18.333°N 82.8667°E. It has an average elevation of 911 mts (2,989 ft). It is located 114 km from Visakhapatnam, close to the Orissa state border. The Anantagiri and Sunkarimetta Reserved Forest are part of Araku valley, which are rich in biodiversity. This valley is surrounded by mountains like Galikonda, Raktakonda, Sunkarimetta and Chitamogondi. The Araku area experiences tropical and humid climate with annual temperature ranging from 10°C to 37.8°C. The annual rainfall varies from 800 to 1000 mm in plains to 1000 mm - 2000 mm in the hills. The area is hilly terrain ranging altitude from 1090 m to 1420 m above mean sea level. The hill tops are covered with lateritic bauxite capping. *Phoenix acaulis* is the dominant plant species, interspersed with various grasses and herbaceous species and scattered trees, both on the slopes and hilltops. The soil is fertile with humus on top, finely grained, non-clayey and susceptible to erosion. Moist mixed deciduous forest is found towards the lower slopes and in the valleys, while scrubs and dry savannah are seen at the hilltops. The inhabitants generally light fire on the lower slopes during February and March for agricultural purposes

### Data collection and sampling techniques

Ethnobotanical survey was conducted by repeated interviews and conversations with aged ethnic people, local herbal healers, shepherds, tribal headmen, owners of cattle herds, etc. A total around 49 people were interviewed prior to interviews. Traditional healers were explained the reasons for conducting the survey and the information collected. A semi-structured questionnaire was used for the interviews. The basic survey method followed was that of (Martin, 1995) and (Maundu, 1995). In this method, the informant takes the observer on guided field-walks through areas from where the informant collects the medicinal plants. The plants are shown to the observer along with providing information on plant name (local). The information on useful plant species, parts used, local names and mode of utilization was collected. The data collected were further verified and cross-checked in different

tribal gudems (Hamlets). Plants used in their daily needs were also collected. Plants used in their traditional medicinal uses were identified with the help of regional floras (Gamble and Fischer, 1957)

### Aim of study

The aim of the present study is to collect information on traditional uses of medicinal plants used in the preparation of herbal drugs by the tribal people living in this area. Many ethnobotanical studies had been carried out in Araku valley. The medicinal plants available in these remote areas have not been explored well, which deserves a thorough investigation for their pharmacological activities.

### Selection of informants

A total of 49 traditional healers (40 males and 9 females) from the ethnic groups of different ages (25–91 years) were selected with the help of local elders, agricultural and health extension workers and administrative personnel and interviewed as key informants. The selected healers were well-known in the community due to their long practice in providing services related to traditional health care to the community. Prior to the interview process, discussion was held with the informants through assistance of local elders to elaborate the objective of the study. This was done to clarify the purpose and build confidence of the respondents to provide reliable information without suspicion. The traditional healers that participated in the study were asked to provide information on plant(s) used against specific illness in humans, in particular the type of plant (e.g. trees, shrubs, herbs, climbers or others) and the parts used (e.g. roots, leaves, seeds, flowers, stems or others) were recorded. Rare specimen of the reported medicinal plants were collected during the interview from the field and was grown in the green house of Plant Biotechnology UAS, GKVK, Bangalore for further study.

## RESULTS

A total number of 226 plants belonging to 78 families were recorded (Table 1). Fabaceae has the highest number of species (25 species) followed by Asteraceae (15 species), Malvaceae (12 species) Amaranthaceae and Euphorbiaceae (9 species each) Acanthaceae, Moraceae, Lamiaceae, Asclipiaceae (7 species each) Apocynaceae (6 species) Caesalpiniaceae Cucurbitaceae and Solanaceae (5 species each), Poaceae, Tiliaceae, Meliaceae, Leguminosae (4 species each), Liliaceae, Verbenaceae, Rubiaceae, Molluginaceae Mimosaceae Capparaceae and Boraginaceae (3 species each), Alangiaceae, Araceae, Araceae, Braasicaceae, Cactaceae, Cleomaceae, Combretaceae, Convulvolaceae, Crassulaceae, Lythraceae, Menispermaceae, Nyctaginaceae, Plumbaginaceae, Rutaceae, Sapindaceae and Sterculiaceae (2 families each) and rest of the families contain one species each (Table 2).

Among the total plant species, Herbs are highest in number (44%) followed by Trees (27%), Shrubs (19%), Climbers (8%) and Grass (2%) (Fig.2). With regard to the frequency of plant parts used in preparations, leaves (31%) was most often used followed by roots (17%), bark (12%), seeds (10%), whole plant (9%) fruits (6%), flowers (5%) and others (10 %) such as tuber, twigs, latex, gum, rhizome, seed oil, copra, peel, charcoal. (Fig.3)

Table 1. List of medicinal plants surveyed in Araku valley

S.No.	Taxa	Vernacular name	Family	Growth Habit	Parts used	Medicinal use
1.	<i>Punica granatum L</i>	Danimma	Punicaceae	Shrub	Peal, flower, seeds and leaves	Diarrhea, dysentery, diabetic, antioxidant
2.	<i>Lucas linifolia Spreng.</i>	Tummi	Lamiaceae	Herb	Flowers, leaves	Eye infections, leprosy, ringworm, stomach ache, inflammation, snake bite
3.	<i>Cassia ianceolate</i>	Sunamukhi	Fabaceae	Shrub	Leaves	Blood purification, dental problems, head ache
4.	<i>Santalum album</i>	Harichandanam	Santalaceae	Tree	Bark	Infections, acne, bronchitis, fever, head ache
5.	<i>Zanthoxylum armatum DC.</i>	Tella kasimi	Rutaceae	Shrub	Leaves	Dysentery and vomiting in children
6.	<i>Mimosa catechu</i>	Sandra	Mimosaceae	Tree	Bark, flowers	Leprosy chicken pox, cough, dysentery
7.	<i>Tinospora cordifolia</i>	Tippa teega	Menispermaceae	Climber	Leaves	Blood pressure, cholesterol, diabetic, cough, asthma, kidney stones
8.	<i>Clitorea ternetia</i>	Dintena	Fabaceae	Climber	Leaves, root bark, whole plant	Madness, skin diseases, throat infections
9.	<i>Hemidesmus indicus</i>	Sugandha pala	Apocynaceae	Shrub	Roots	Blood purifier, excessive thirst, diarrhea, diabetes, anti-inflammatory
10.	<i>Hydrocotyle asiatica</i>	Saraswathi	Apiaceae	Herb	Leaves	Pronunciation, jaundice, blood purification, kids memory power
11.	<i>Cicerarietinum</i>	Sanaga	Fabaceae	Shrub	Seeds, roots	Cough, heart pain, sperm growth, cold, liver infections, anti-poison
12.	<i>Citrollus colocynthis</i>	Verripuccha	Cucurbitalis	Viny	Root, fruit	Infected tooth, breast infections, insect bites, skin diseases, tonsils, fits, ear infections, joint pains
13.	<i>Galega purpurea</i>	Vempali	Fabaceae	Shrub	Leaves, roots	Grasping power, throat infections, wounds
14.	<i>Vitex nigundo</i>	Vavili	Lamiaceae	Shrub	Root, leaves, seeds	Back ache, throat infections, ringworm, eczema, liver disorders, gout, vermicide
15.	<i>Embelia ribes</i>	Vayuvidangalu	Primulaceae	Shrub	Seeds	Skin diseases, head ache, amoebic dysentery, Tuberculosis, menstruation disorders, burns, helminthiasis
16.	<i>Solanum virginianum</i>	Vakudu	Solanaceae	Herb	Root, fruit	Digestion, eye infection, finger abscess, cough, asthma, chest pain
17.	<i>Evalvulus alsinoides</i>	Vishnukrantha	Convolvulaceae	Herb	Whole plant	Viral fevers, asthma, thyroid, skin diseases
18.	<i>Cleone gynandra linn</i>	Vaminta	Cleomaceae	Herb	Leaves	Sinus, head ache, insect bite,
19.	<i>Pterosperum xylocarpum</i>	Dudica	Sterculiaceae	Tree	Bark, stem, root	Stomach ache, swellings, diarrhea
20.	<i>Acorus calamus</i>	Vasa	Acoraceae	Herb	Bulb	Pronunciation, paralysis, wounds healing, heart diseases, anti-microbial, relives constipation, induces vomiting
21.	<i>Cassia fistula</i>	Raela	Caesalpiniaceae	Tree	Root	Cough, urine infections
22.	<i>Euphorbia prostrata L</i>	Reddivarinanabalu	Euphorbiaceae	Herb	Leaves, whole plant	Menstruation problems, cough, asthma, bronchitis, jaundice, gonorrhea, pimples, tumors and digestive problems
23.	<i>Ficus religiosa</i>	Raavi	Moraceae	Tree	Bark, roots, fruits, leaves	Urine infections, back ache, asthma, TB, burning sensations, vomiting
24.	<i>Butea frondosa</i>	Moduga	Fabaceae	Tree	Seeds, roots, gum, flowers	Piles, fits, dysentery, urine retention, burns, insect bites
25.	<i>Ficus recemosa</i>	Medi	Moraceae	Tree	Bark, root	Burnt wounds, more thirsty, normal delivery, mouth sores, mosquito bites,
26.	<i>Raphanus satlvus</i>	Mullangi	Brassicaceae	Shrub	Seeds, root, leaves.	Leucoderma, cough, joint pains, insect bites, dog bites,
27.	<i>Aegle mermelose</i>	Maredu	Rutaceae	Tree	Leaves, bark, fruits	Urine infections, leprosy, typhoid, piles, insect bites, vomiting
28.	<i>Mollugo pentaphylla L</i>	Chetarasi	Aizoaceae	Herb	Leaves, whole plant	Colic, colds and fevers, diarrhea, rheumatism, spasms, and as a tonic
29.	<i>Grewia flavescens Juss</i>	Banka jana	Tiliaceae	Shrub	Roots	Anti-inflammatory, diabetes, anti-helminthes and anti-malaria
30.	<i>Triumfetta rotundifolia L</i>	Kustumokka	Tiliaceae	Herb	Fruit	Vitality of the brain, demulcent
31.	<i>Indigofera trita L</i>	Jedi vempalli	Fabaceae	Herb	Leaves	Sores, ulcers, aphtha, diuretic
32.	<i>Prosopis cineraria (L.)</i>	Jammi	Mimosaceae	Tree	Leaves, flowers, bark, stem, fruit, seeds	Cough, asthma, bronchitis, chest congestion, skin diseases, hemorrhoids, bowel syndrome with diarrhea, nasal bleeding
33.	<i>Zingiber officinale Rosc.</i>	Allamu	Zingibera ceae	Herb	Rhizome	Cold, cough & asthma
34.	<i>Moringa pterygosperma</i>	Munaga	Moringaceae	Tree	Leaves, flowers, root, bark,	Sexual virility, improves breast milk, head ache, fits
35.	<i>Vigna mungo</i>	Minimulu	Fabaceae	Herb	Seeds	Increases sperm count and sperm motility
36.	<i>Mangifera indica</i>	Mamidi	Anacardiaceae	Tree	Bark, gum	Menstruation problems, cracks heal

37.	<i>Hibiscus rosa sinensis</i>	Mandaram	Malvaceae	Herb	Leaves, flowers	Ear infections, hair fall reduce and strengthening
38.	<i>Ficus indica &amp; ficus benghalensis</i>	Marri	Moraceae	Tree	Stem, bark, latex, tender leaves	Decay tooth, urine infections, dysentery, diabetes, back ache, blood vomiting, hair fall control
39.	<i>Celosia cristata &amp; adiantum menlanacaui</i>	Mayurisiki	Amaranthaceae	Herb	Leaves	Wounds, cold, dry cough, dandruff control, strengthening the hair, asthma
40.	<i>Phyllanthus emblica</i>	Usiri	Phyllanthaceae	Tree	Fruit, bark, seeds, leaves	Digestion, cough, menstruation problems, dysentery, dandruff control, conditioner, stomach infections
41.	<i>Azadirachta indica A</i>	Vepa	Meliaceae	Tree	Leaves, flowers, bark, root, seed oil	Antibacterial, an effective mosquito repellent acne anti-helminthes, anti-fungal, anti-diabetic, antiviral, healthy hair, improve liver function, detoxify the blood, pest and disease control, fever reduction, dental treatments, cough, asthma, ulcers, piles, intestinal worms, urinary diseases, skin diseases, contraceptive and sedative
42.	<i>Dichrostachys cinerea L</i>	Nella jammi	Fabaceae	Tree	Bark, root, leaves	Headache, toothache, dysentery, elephantiasis, leprosy, syphilis, coughs, anti-helminthes, purgative and strong diuretic, epilepsy laxative, and a powdered form is massaged on limbs with bone fractures
43.	<i>Alangium salvifolium L</i>	Udaga	Alangiaceae	Tree	Fruit, root, bark	Bites by rabbits, rats, and dogs, skin problems and antidote for snake bite
44.	<i>Triumfetta rhomboidea Jacq</i>	Bankatuttura	Tiliaceae	Shrub	Leaves, flowers, root, bark	Diuretic, dysentery, cooling, tonic
45.	<i>Datura metel</i>	Ummetta	Solanaceae	Herb	Leaves, seeds	Inhalation, tonsils, ulcers, swellings, abscesses in the head, lubricates, tooth decay
46.	<i>Alangium decapetalum</i>	Vooduga	Alangiaceae	Tree	Root, seeds	Rat & dog bites, dark spots, piles, skin diseases, insect bites
47.	<i>Terminalia chebala</i>	Karaka	Combretaceae	Tree	Seeds, bark	Vomiting, rashes on skin, tonsils, mouth ulcers, dysentery, more sweat
48.	<i>Aloe indica</i>	Kalabanda	Asphodilaceae	Herb	Whole plant	Eye infection, menstruation problems, wounds, joint pains, dandruff control,
49.	<i>Cassia occidentalis</i>	Kasivinda	Caesalpinaceae	Herb	Leaves, bark, root, seeds	Paralysis, skin diseases, cut wounds, poisonous bites, menstruation problems, elephantiasis, asthma, viral fever, urine infections
50.	<i>Momordica charantia</i>	Kakara	Cucurbitaceae	Climber	Leaves, root, fruits, seeds	Diabetes, Blood pressure, body swellings, dysentery, fits wounds
51.	<i>Soymida febrifuga Roxb</i>	Cheramanu	Meliaceae	Tree	Bark	Tonic; decoction used in gargles, vaginal infections, rheumatism swellings and as enemata. Diarrhea, dysentery, fever
52.	<i>Ximenia americana L</i>	Bilia nekkera	Olacaceae	Shrub	Leaves, fruits, roots, twigs, bark	Fever, colds, and as a laxative and eye lotion, to treat dysentery in calves.
53.	<i>Dalbergia paniculata Roxb</i>	Chindugu	Fabaceae	Tree	Bark	Baldness
54.	<i>Catunaregam spinosa T</i>	Manga	Rubiaceae	Shrub	Rind, fruit, bark, roots	Rind and fruit have useful emetic, diaphoretic and antispasmodic properties, acute bronchitis and asthma, sedative and fever
55.	<i>Solanum nigrum</i>	Kamanchi, buddakasi	Solanaceae	Shrub	Leaves	Joint pains, head ache, cold, eye, ear, throat infections, cardiac problems, kidney infections, dog bite, burns
56.	<i>Pongamia glabra</i>	Ganuga	Fabaceae	Tree	Leaves, stem, roots, bark, seeds, flowers	Viral fevers, piles, dry cough, fertility, skin diseases, throat and urine infections, tooth protector, paralysis
57.	<i>Indigofera hirsute L</i>	Kolapattitulu	Leguminosae	Herb	Leaves	Stomach problems and yaws
58.	<i>Acacia nilotica L</i>	Nella thumma	Fabaceae	Tree	Bark, leaves	Stomach upset and pain, protect against scurvy, dysentery and diarrhea
59.	<i>Acacia leucophloea Roxb</i>	Tella tumma	Fabaceae	Tree	Charcoal, gum	Dental problems, diarrhea, bark – cough, Asthma, fractures
60.	<i>Prosopis juliflora L</i>	Mulla tumma	Fabaceae	Tree	Whole plant	Fire wood
61.	<i>Sapindus emarginatus</i>	Kunkudu	Sapindaceae	Tree	Leaves, fruits	Eye infections, insect bites, head ache
62.	<i>Blumea mollis Don</i>	Kukka pogaku	Asteraceae	Herb	Leaves, whole plant	Skin diseases, diarrhea
63.	<i>Cocos nucifera</i>	Kobbari	Arecaceae	Tree	Copra	Ingestion of disagreeable tasting medicines.
64.	<i>Lycopodium imbricatum</i>	Kondapindi	Selaginellales	Shrub	Leaves	Urinary infections, kidney stones
65.	<i>Phonenix dactylifera</i>	Karjuram	Arecaceae	Tree	Fruit, seeds	Hiccups, back ache, fertility, menstruation problems, blood purification, brain infections, dysentery, stomach and eye infections,

66.	<i>Wrightia tinctoria</i> (Roxb.) R. Br.	Ankudu	Apocynaceae	Tree	Bark	Intoxicant
67.	<i>Canthium parviflorum</i> L	Thunb Balusu	Rubiaceae	Shrub	Leaves, root, bark	Dysentery, fever
68.	<i>Annona squamosa</i> L	Setha falam	Annonaceae	Tree	Fruit, leaves, bark	Edible, anemia, cooling sedative, decreases burning sensation, diarrhea, dysentery
69.	<i>Dalbergia lanceolaria</i> L	Nagulapachari	Fabaceae	Tree	Bark, seed oil	Anti-inflammatory rheumatism, dyspepsia
70.	<i>Thespesia populnea</i>	Gangaravi	Malvaceae	Tree	Leaves, seeds	Body pains, wounds, skin diseases, throat swelling, mouth ulcers, urinary infections
71.	<i>Nerium odorum</i>	Ganneru	Apocyanaceae	Herb	Flowers, leaves, root, bark	Acne marks, dandruff, fertility, joint pains, eczema, paralysis, skin diseases
72.	<i>Abutilon crispum</i> L	Tuttru benda	Malvaceae	Shrub	Leaves, roots	Bronchitis, piles, pregnancy
73.	<i>Pterocarpus marsupium</i> Roxb	Yegisa	Fabaceae	Tree	Wood, leaves and flowers	Headache, antipyretic, anti-helminthes, aphrodisiac
74.	<i>Sida acuta</i> Burm	Bala	Malvaceae	Herb	Whole plant	Antibacterial, malaria, viral fever
75.	<i>Delonix regia</i> (Hook.) Raf.	Gulmohara	Fabaceae	Tree	Flowers	Chronic fever, antibacterial
76.	<i>Cynodon dactylon</i> Pers.	Garika	Poaceae	Grass	Leaves, roots	Cut wounds, rashes, ringworm, kidney stones, nasal blood flow, menstruation problems, urinary disorders, ear infections
77.	<i>Aristolochia bracteata</i> Lam.	Gadidha gadapa	Aristolochiaceae	Climber	Leaves	Laziness, skin diseases, intestinal infections, fertility, normal delivery, snake bite, cold fever, fits, cut wounds
78.	<i>Abrus precatosius</i> L	Gurivindha teega	Leguminosae	Climber	Leaves, seeds, root	Leprosy, piles, fertility, vitiligo, hair fall control, tooth decay
79.	<i>Rosa x damascena</i> Mill.	Gulabi	Rosaceae	Shrub	Flowers	Nasal disorders, viral infections, constipation, bald head, beauty & glow
80.	<i>Cucurbita maxima</i> Duch.	Gummadi	Cucurbitaceae	Climber	Stem, fruit, leaves, seeds	Urinary infections, millipede bite, asthma, nail infections, TB, madness,
81.	<i>Tephrosia villosa</i> (L.) Pers	Nagu vempalli	Fabaceae	Herb	Leaves, whole plant, root	Memory to children, tooth decay, snake bite
82.	<i>Eclipta prostrata</i> (Linn.) Mant.	Guntagalagara	Asteraceae	Herb	Leaves	Head ache, filariasis, nasal disorders, mouth ulcers, tooth decay, throat and stomach infections, scorpion bite, elephantiasis, gum infections, hair growth and prevents hair fall
83.	<i>Triticum aestivum</i> L	Godumulu	Poaceae	Grass	Seeds	Easy digestion, cardiac disorder, strengthen the muscles, male fertility, dehydration, fever, diabetes, dry cough, bone fractures, asthma, burns, menstruation problems, coughing & sneezing, breast pain, constipation
84.	<i>Lawsonia inermis</i>	Gorinta	Lythraceae	Shrub	Leaves, seeds, root	Swellings & pains, cracks, burning sensation, dehydration, strengthen the tooth, eye pain, skin tightening, blood vomiting, psoriasis, fertility
85.	<i>Vernonia anthelmintica</i> (Linn.) Willd.	Neeru visham	Asteraceae	Herb	Seeds	Dyspepsia
86.	<i>Albizia lebbek</i>	Dirisenachettu	Mimosaceae	Tree	Leaves, seeds, whole plant	Asthma, piles, eye pain, fits
87.	<i>Tamarindus indica</i> L	Chinta	Fabaceae	Tree	Fruit, seeds, leaves, bark, flowers	Fractures pain relief, vomiting, dehydration, digestion, ring worm, scorpion bite, increases the sperm count, liver disorders, jaundice, leprosy wounds
88.	<i>Plumbago zeylanica</i>	Chitramoola	Plumbaginaceae	Herb	Leaves, roots, bark	Modulate the voice box, snake bites, piles, fertility, stomach infections, sciatica, joint pains, elephantiasis, asthma, cough, inhalation
89.	<i>Blainvillea acmella</i> L	Pipulika	Asteraceae	Herb	Leaves, flowers	Tooth ache, rheumatism, Itches, diuretic
90.	<i>Myristica fragrans</i>	Jaji	Myristicaceae	Tree	Seeds, root, bark	Relief from insomnia, BP, kidney stones, digestion, inflammation wounds, injuries and arthritis, irritation of skin, asthma, sleep, overpowering, uterus prolapsed, menopausal disorders
91.	<i>Abutilon indicum</i>	Duvvenabenda	Malvaceae	Shrub	Whole plant	Diuretic, sedative, anti-inflammatory, tonic, headache, gonorrhea
92.	<i>Corchorus capsularis</i> L	Goninara	Malvaceae	Shrub	Root, leaves	Dysentery increase appetite, digestion, reduce fever
93.	<i>Calotropis gigantium</i> .L	Gilledu	Apocynaceae	Shrub	Leaves, latex, root, flowers	Swellings, head ache, ear pain, burnt wounds, gangrene, scorpion bite, fits, osteomyelitis, hyperkeratosis, joint pains

94.	<i>Urginea indica</i> (Roxb.)Kunth	Adavi ulli	Liliaceae	Herb	Bulb	Menstrual disorders
95.	<i>Corchorus trilocularis L</i>	Bankituttura	Malvaceae	Herb	Root, seeds	Anti-inflammatory, cholesterol Lowering activity, demulcent
96.	<i>Bauhinia racemosa Lam</i>	Tella arechettu	Fabaceae	Tree	Leaves, bark	Anti – oxidant, anti- microbial, asthma
97.	<i>Albizia amara R</i>	Narlinga	Fabaceae	Tree	Bark	Cardiovascular diseases
98.	<i>Leucaena leucocephala(Lam).dewit</i>	Nagari	Mimosoideae	Tree	Leaves	Anti-helminthic
99.	<i>Ficus infectoria L</i>	Juvvi	Moraceae	Tree	Bark, leaves, fruit	Vaginal discharge, halitosis, tooth decay, piles, drooling, bloody vomit, constipation
100.	<i>Dicoma tomentosa cass</i>	Vajradanthi	Asteraceae	Herb	Root, whole plant	Tooth ache, Healing wounds, skin diseases
101.	<i>Piper betal Linn</i>	Thamalapaku	Piperaceae	Climber	Leaves	Cut wounds, throat swelling, mastitis, hoarsening of throat, halitosis, nyctalotia, bromhidrosis, dry cough, yawning, hiccups', cold, fever with chill
102.	<i>Mucuna pruriens</i>	Dulagonti	Fabaceae	Climber	Leaves, seeds	Scorpion bite, asthma, fits
103.	<i>Cassia auriculata</i>	Tangedu	Fabaceae	Shrub	Leaves, roots, bark, flowers	Conjunctiva, head ache, viral fevers, asthma, frequent urinary, diabetes, urethritis, dysentery, fever during post-pregnancy
104.	<i>Terminalla belarica Roxb.</i>	Thani	Combretaceae	Tree	Cuticle, seeds	Infertility, diarrhea, swellings, asthma, cardiac pains, hemorrhage, inflammation, glaucoma, horsing of throat, tooth decay, cough, tightening vagina
105.	<i>Indigifera tinctoria L</i>	Neeli	Fabaceae	Shrub	Root, seeds, leaves, whole plant	Tooth decay, TB, kidney stones, ear infection, poisonous insect bite, urinary infections, leprosy wounds marks, hair growth
106.	<i>Asteracantha longifolia L</i>	Nerugobbi	Acanthaceae	Herb	Root, seeds, whole plant	Sperm count, tightening of vagina, menorrhagia, fertility
107.	<i>Sesamum Indicum L.</i>	Nuvvulu	Pedaliaceae	Herb	Leaves, seeds, whole plant	Scary dreams, constipation, menorrhagia, menopause, infertile, facial beauty, hair growth, digestion
108.	<i>Capparis zeylancia L</i>	Aadonda	Capparaceae	Shrub	Root, bark	Ear infections
109.	<i>Boswellia serrata Roxb.</i>	Guggilam	Burseraceae	Tree	Gum	Osteoarthritis, antifungal
110.	<i>Cassia tora L</i>	Chinnakasinda	Leguminosae	Herb	Leaves, root	Leucorrhoea, febrifuge, Diuretic, filariasis
111.	<i>Corchorus aestuans L</i>	Nelabera	Malvaceae	Herb	Seeds, root, bark	Stomach Ache, pneumonia, Inflammatory
112.	<i>Syzygium jambolanum Linn.</i>	Neraydu	Myrtaceae	Tree	Seeds, bark, leaves, stem	Diabetes, frequent urination, vaginal infection, black bloody stools, watery stools, blood urination, stomach pain, bromhidrosis, menorrhagia, severe vomiting, gum tightening
113.	<i>Curculigo orchioides</i>	Nelatadi	Hypoxidaceae	Grass	Tuber	To develop the abnormal ear, swellings, to clear deaf, brighten the skin tone, bloody stools, breast and stomach pain, increases the sperm count
114.	<i>Andrographis paniculata Nees.</i>	Nelavemu	Acanthaceae	Herb	Whole plant, leaves	Blood purification, snake bite, asthma, chicken pox, severe stomach pain, skin diseases, viral fever, killer cancer
115.	<i>Gossypium herbeceum Linn.</i>	Patthi	Malvaceae	Tree	Stem bark, flower, leaves, seeds, root, fruit	Wound swellings, increases the sperm count, psychological disorders, burnt, swollen leg, rat bites, vomiting during pregnancy, vaginal tightening, eye pain, menopause
116.	<i>Kalanchoe laciniata(L.) DC.</i>	Pathrabeejam	Crassulaceae	Herb	Leaves	Bleeding from cuts, head ache, cholera
117.	<i>Tribulus terrestris L</i>	Palleru	Zygophyllaceae	Herb	Fruit, leaves, whole plant, stem	Conjunctivitis, cardiac diseases, kidney stones, menopause, pregnancy, gum infections, throat horsing, gastro intestinal disorders, inhalation, cough, mouth ulcers, halitosis, hair growth, inflammation, discoloration of skin
118.	<i>Sida rhombifolia L</i>	Athibala	Malvaceae	Herb	Leaves	Rheumatism, relieve swelling, headache, anti-fungal
119.	<i>Indigofera ennaeaphylum L</i>	Yerra palleru	Fabaceae	Herb	Whole plant	Skin diseases, diuretic, diarrhea

120.	<i>Opuntia dillenii</i> (Ker Gawl.) Haw.	Naga jammudu	Cactaceae	Shrub	Leaves, flowers, fruit	Bleeding, boils, throat pain
121.	<i>Acacia arabica</i> (Lam.) Willd.	Nalla tumma	Leguminosae	Shurb	Leaves, Seeds, Bark, Gum	Diarrhea, eczema, strengthen loose teeth and arrest any bleeding from the gums
122.	<i>Holarrhena pubescens</i> (Buch-Ham.)	Palakodisa	Apocynaceae	Tree	Leaves, latex, whole plant, seeds, bark	Detoxification, uterus disorders, bloody stools, fits, piles, kidney stones, leprosy
123.	<i>Argemone mexicana</i> L	Pithchikusuma	Papaveraceae	Herb	Leaves, roots, stem, seeds, whole plant	Conjunctivitis, jaundice, skin diseases, scorpion bite, piles, cough, severe wounds, urinary infections, stomach ache, head ache, ear infections
124.	<i>Mentha Arvensis</i>	Podina	Lamiaceae	Herb	Leaves	Rehair growth, skin diseases, digestion, hiccups', black marks on face, head ache, ear infection, dysentery, stomach pain, gastro intestinal problems
125.	<i>Capparis sepiaria</i> L	Nalla uppi	Capparaceae	Shrub	Leaves	Eczema, dandruff
126.	<i>Cleome viscosa</i> L	Vamita	Capparaceae	Herb	Root, leaves	Wounds, ear infections
127.	<i>Polygola arvensis</i> wild	Kodassari	Polygalaceae	Herb	Roots	Antiseptic, asthma, chronic bronchitis
128.	<i>Polycarpha corymbosa</i> (L.) Lam	Bomma sari	Caryophyllaceae	Herb	Leaves	Boils, inflammatory swellings, astringent, demulcent
129.	<i>Sida cordifolia</i> L	Chittamutti	Malvaceae	Herb	Leaves	Asthma, allergies, weight loss
130.	<i>Waltheria indica</i> L	Nalla binda	Sterculiaceae	Shrub	Bark, leaves	Stomach infections, diarrhea,
131.	<i>Grewia hisuta</i> Vahl	Nagabala	Tiliaceae	Shrub	Leaves, roots	Anti- pyretic, Nervine tonic
132.	<i>Glinus oppositifolius</i> L	Chayuntarashi	Molluginaceae	Herb	Leaves, stem	Skin diseases, piles, Leucoderma
133.	<i>Bidens biternata</i> Lour	Chiruchinta	Asteraceae	Herb	Leaves	Treat eye and ear infection, Wounds, pain reliefs
134.	<i>Vernonia cinerea</i> L	Sahadevi	Asteraceae	Herb	Seeds, root	Digestion, Rheumatism
135.	<i>Hemidesmus indicus</i> L	Sugandhapala	Asclepiadaceae	Climber	Whole plant	Anti- toxic, diabetes, urinary Tract disorders
136.	<i>Largerstroemia parviflora</i> Roxb	Chennangi	Lythraceae	Tree	Roots	Anti-pyretic
137.	<i>Opuntia monacantha</i> Ker. Gawl	Naga jammudu	Cactaceae	Shrub	Leaves, fruits, flower	Leaves-bleeding, flower- boils, Fruit-throat pain
138.	<i>Coldenia procumbens</i> L	Hamsapadu	Boraginaceae	Herb	Leaves	Diabetes, rheumatism, Inflammation
139.	<i>Lepidagathis cristata</i> Wild	Mulla banthi	Acanthaceae	Herb	Roots	Dental problem
140.	<i>Boerhavia diffusa</i> L.nom.cons.	Tellagalijeru	Nyctaginaceae	Herb	Root	Digestion, liver problems, Cardiac, spleen, diuretic
141.	<i>Aerva Javanica</i> (Burm.f.)Juss.ex	Pedda pindikura	Amaranthaceae	Herb	Whole plant	Kidney stones
142.	<i>Aerva lanata</i> L	Pindidonda	Amaranthaceae	Herb	Whole plant	Bladder and Kidney stones
143.	<i>Celosia argentea</i> L	Gunugu	Amaranthaceae	Herb	Leaves	Gonorrhea
144.	<i>Euphorbia rosea</i> Roxb	Chinnamman paccharisi	Euphorbiaceae	Herb	Leaves, roots	Asthma, rheumatism, toothache
145.	<i>Holoptelea integrifolia</i> Roxb	Namli	Ulmaceae	Herb	Bark	Piles, fistula scabies and Anti-tumor effect
146.	<i>Ficus religiosa</i> L	Ravi	Moraceae	Tree	Leaves	Teeth problems, hair Tonic
147.	<i>Plumbago zeylanica</i> L	Tella chitramulamu	Plumbaginaceae	Herb	Leaves, root bark	Anti-helminthic, Immunity
148.	<i>Caralluma adscendens</i> var.	kaarallamu	Asclepiadaceae	Herb	Whole plant	Rheumatism, stomach Disorders, reduce obesity, Suppress hunger, inflammatory
149.	<i>Glinus oppositifolius</i> L	Chayuntarashi	Molluginaceae	Herb	Leaves, root	Skin diseases, piles, Leucoderma
150.	<i>Euphorbia nivulia</i> L	Aaku jemudu	Euphorbiaceae	Tree	Leaves, latex	Mental disease, allergic Rhinitis, lactation, emetic, ulcers

151.	<i>Andrographis paniculata L</i>	Nilavembu	Acanthaceae	Herb	Leaves, roots	Wounds, anti-inflammatory, Malaria, snake Bite
152.	<i>Euphorbia hirta L</i>	Nanabala	Euphorbiaceae	Herb	Whole plant,	Bronchitis asthma, laryngeal spasm
153.	<i>Ficus hispida L</i>	Bamma medi	Moraceae	Shrub	Leaves, roots, latex	Leucoderma wounds, Diarrhea, ulcers
154.	<i>Borassus flabelifer L</i>	Thati chettu	Palmae	Tree	Fruit	Fruit pulp - edible part
155.	<i>Streblus asper L</i>	Barrenka	Moraceae	Tree	Twigs, bark	Dental problems, muscle Pain
156.	<i>Cyperus rotundus L</i>	Tungamusthlu	Cyperaceae	Herb	Whole plant	Dysentery, liver problems, Dandruff, cough
157.	<i>Achyranthes aspera L</i>	Uttaraene	Amaranthaceae	Herb	Roots	Snake bite, teeth Infection, cough, asthma
158.	<i>Apluda mutica L</i>	Bongada	Poaceae	Grass	Whole plant	Diuretic, gonorrhea
159.	<i>Heliotropum indicum L</i>	Nagadanthi	Boraginaceae	Herb	Leaves	Wounds, skin diseases, ulcers
160.	<i>Leptadenia reticulata W&amp;A</i>	Mukku tummu	Asclepiadaceae	Shrub	Roots and leaves	Bronchitis, diuretic Constipation, cures bleeding Disorders, earache
161.	<i>Physalis minima L</i>	Kumpati	Solanaceae	Herb	Whole plant	Urinary infections, Anti-pyretic, anti-inflammatory
162.	<i>Alternanthera sessilis (L.)DC</i>	Ponnagantikura	Amaranthaceae	Herb	Leaves, root, stem	Wounds, eye trouble, cough - bronchitis, Diabetes, jaundice
163.	<i>Pupalia lappacea L</i>	Thella uthareni	Amaranthaceae	Herb	Leaves	Bone fractures, boils, cough
164.	<i>Alternanthera pungens Kunth</i>	Khaki	Amaranthaceae	Herb	Leaves	Diuretic, gonorrhea
165.	<i>Gyrocarpus americanus Wild</i>	Nalla ponuku	Hernandiaceae	Tree	Root , bark	Antioxidant, anti-cancer
166.	<i>Tragia involucrata L</i>	Dulagandi	Euphorbiaceae	Herb	Whole plant	Fever, head ache
167.	<i>Agave cantula Roxb</i>	Kithanara	Agavaceae	Herb	Leaves	Leucoderma
168.	<i>Lasagea mollis cav</i>	Silk leaf	Asteraceae	Herb	Whole plant	Cure cold, cough and nasal Congestion
169.	<i>Sphaeranthus indicus L</i>	Boddasoram	Asteraceae	Herb	Whole plant	Laxative digestible, tonic, Tuberculosis
170.	<i>Mollugo pentaphylla L</i>	Chetarasi	Molluginaceae	Herb	Root	Antiseptic, stomach ache, eye diseases
171.	<i>Barleria longifolia L</i>	Pinna gorinta	Acanthaceae	Shrub	Leaves, root	Diabetes, liver problems, Aphrodisiac
172.	<i>Phoenix sylvestris Roxb</i>	Etha	Liliaceae	Tree	Leaves, fruits	Fevers, cooling, Tongue problems, Cardio tonic
173.	<i>Urena lobata Linn.</i>	Puliadugu mokka	Malvaceae	Herb	Root	Stomach ache
174.	<i>Cymbopogon flexuosus Nees ex steud</i>	Nimma gaddi	Poaceae	Grass	Whole plant	Wound healing
175.	<i>Acalypha indica L</i>	Muri pindi	Euphorbiaceae	Herb	Whole plant	Skin diseases
176.	<i>Croton bonplandianum Bail</i>	Galivana	Euphorbiaceae	herb	Whole plant	Control blood pressure
177.	<i>Euphorbia tirucalli L</i>	Cemudu	Euphorbiaceae	Shrub	Latex	Dental problems, cough and cold
178.	<i>Ageratum conyzoides Linn</i>	Pumpullu	Asteraceae	Herb	Leaves	Itching, skin infections
179.	<i>Basella rubra Linn</i>	Bachhali	Basellaceae	Herb	Leaves, whole plant	Sores and gonorrhea, ulcers, boils and abscesses, snake bite
180.	<i>Lantana camara var. aculeata</i>	Puli kampa	Verbenaceae	Shrub	Leaves	Epilepsy, asthma, Analgesic, hepatic active, Antidote
181.	<i>Benincasa hispida (Thunb.) Cogn</i>	Budithagu mmadi	Cucurbitaceae	Creeper	Fruit, seeds	Anti-diarrheal, obesity, ulcer, and antioxidant and diuretic
182.	<i>Cardiospermum halicacabum Linn.</i>	Budda kakara	Sapindaceae	Climber	Leaves	Skin diseases, itching



183.	<i>Pulicaria wightiana</i> (DC).	Adavi chamanthi	Asteraceae	Herb	Leaves	Kidney stones, leprosy, Wounds, skin diseases, Dandruff
184.	<i>Ehretia laevis</i> Roxb	Paladantham	Boraginaceae	Tree	Flowers, bark, roots	Syphilis, diphtheria, eczema
185.	<i>Solanum surattense</i> B	Errinvanga Nelamulaka	Solanaceae	Herb	Leaves	Cough, Cold, Asthma
186.	<i>Gmelina asiatica</i> L	Pedda nevli	Verbenaceae	Shrub	Leaves, root	Anti-pyretic hepatic diseases, Jaundice, dental Problems
187.	<i>Acanthospermum hispidum</i>	Pothora konta	Asteraceae	Herb	Leaves	Cuts and wounds
188.	<i>Ocimum sanctum</i> L	Tulasi	Lamiaceae	Herb	Leaves	Arthritis, anti-cancer, skin Disease, anti-stress, cough cold, Earache, anti-pyretic, diuretic, Tumors, diabetes
189.	<i>Euphorbia antiquorum</i> L	Peeda jamudu	Euphorbiaceae	Tree	Bark, roots	Fistula, skin diseases
190.	<i>Butea superba</i> Roxb.	Palasamu	Fabaceae	Tree	Flowers, leaves	Snake bite, male vitality and as an aphrodisiac
191.	<i>Celosia argentea</i> Linn. Var. Plumose	Errakodijuttu	Amaranthaceae	Herb	Leaves	Ulcers
192.	<i>Chlorophytum arundinaceum</i> Baker	Bhudenda	Liliaceae	Herb	Root, tuber	Galactagogue
193.	<i>Cleome gynandra</i> Linn	Ventumkura	Cleomaceae	Herb	Leaves	Paralysis
194.	<i>Melia azadirachta</i> Linn	Turaka vepa	Meliaceae	Tree	Leaves	Menstrual disorders
195.	<i>Leonotis nepetifolia</i> (Linn.) R. Br.	Pedha ranaberi	Lamiaceae	Herb	Whole plant	Rheumatic pains
196.	<i>Cascabela thevetia</i> (Linn.) Lipp.	Paccha ganneru	Apocynaceae	Tree	Bark, root, leaves	Ringworm, scabies
197.	<i>Cassia alata</i> Linn.	Seemaavisa	Caesalpinaceae	Shrub	Leaves	Bronchitis
198.	<i>Clerodendrum serratum</i> (Linn.) Moon.	Seetha chettu	Verbenaceae	Shrub	Leaves	Headache
199.	<i>Cipadessa baccifera</i> (Roth) Miq.	Randabilla	Meliaceae	Shrub	Leaves	Chicken pox
200.	<i>Elephantopus scaber</i> Linn.	Eddu adugu	Asteraceae	Herb	Root	Tongue dryness
201.	<i>Ocimum tenuiflorum</i> Linn.	Krishna tulasi	Lamiaceae	Herb	Leaves	Coughing and sneezing
202.	<i>Nyctanthes arbor-tristis</i> Linn.	Parijatam	Nyctaginaceae	Tree	Seeds	Piles
203.	<i>Bauhinia vahlii</i> Wight & Arn.	Addaku	Caesalpinaceae	Climber	Leaves, bark, stem, root, flowers	Wounds, ulcers, cough, dysentery, snakebite, tumors, flatulence, indigestion, piles
204.	<i>Calotropis gigantea</i> L	Jiledi puvvu	Asclepiadaceae	Tree	Latex, root, leaves	Wounds, arthritis, Lear ache
205.	<i>Leptadenia reticulata</i> W&A	Palateega	Asclepiadaceae	Climber	Leaves	Toxic
206.	<i>Evolvulus alsinoides</i> L	Vishnukranthi	Convolvulaceae	Herb	Leaves	Anti-stress, depression, cough and cold
207.	<i>Adhatoda vasica</i> Nees	Addasaram	Acanthaceae	Herb	Whole plant	Asthma, bronchitis
208.	<i>Pergularia daemia</i> (Forsk.) Chiov.	Dishtiveru	Asclpiadaceae	Shrub	Leaves	Swellings
209.	<i>Leucas aspera</i> (Wild) Link	Tumma chettu	Lamiaceae	Herb	Leaves	Jaundice, menstrual Pains, paralysis, asthma, Diabetes.
210.	<i>Caladium bicolor</i> Vent	Rudra chama	Araceae	Herb	Tuber,	Snake bite, boils, wounds, ulcers
211.	<i>Oroxylum indicum</i> (Linn.) Vent.	Pampanga	Bignoniaceae	Tree	Stem	Jaundice, cough
212.	<i>Rubia cordifolia</i> Linn.	Mangala katthi	Rubiaceae	Herb	Tuber	Jaundice
213.	<i>Ruellia tuberosa</i> Linn.	Jurubula gadda	Acanthaceae	Herb	Leaves	Bone fracture, cuts and wounds
214.	<i>Passiflora foetida</i> Linn.	Gummari theega	Passifloraceae	Herb	Root	Giddiness
215.	<i>Saraca asoca</i> (Roxb.) De Willd	Asoka chettu	Caesalpinaceae	Tree	Stem, bark	Menorrhagia
216.	<i>Scindapsus officinalis</i> Schott	Atukusaru	Araceae	Climber	Root	Bone fracture

217.	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Ranapala	Crassulaceae	Herb	Leaves	Bone fracture
218.	<i>Cissampelos pareira</i> Linn	Chiru boddhi	Menispermaceae	Climber	Root	Diarrhea, piles
219.	<i>Cryptostegia grandiflora</i> (Roxb.)	Gantapala	Asclepiadaceae	Climber	Whole plant	Toxic
220.	<i>Parthenium hysterophorus</i> L	Congress weeds	Asteraceae	Shrub	Whole plant	Urinary tract infections, Rheumatism, pains, dysentery
221.	<i>Cannabis sativa</i> Linn.	Ganjai	Cannabinaceae	Herb	Leaves	Diarrhea
222.	<i>Lagenaria siceraria</i> (Molina) Standl.	Anapa kaya	Cucurbitaceae	Climber	Leaves	Burns
223.	<i>Emilia sonchifolia</i> (L.) DC.	Garbapodu	Asteraceae	Herb	Tuber	Galactagogue
224.	<i>Diplocyclos palmatus</i> (Linn.) Jeffrey	Linga donda	Cucurbitaceae	Seeds	Climber	Fertility
225.	<i>Brassica nigra</i> (Linn.) Koch.	Varanavalu	Brassicaceae	Herb	Seed	Rheumatoid arthritis
226.	<i>Thalictrum foliolosum</i> DC.	Piyaranga	Ranunculaceae	Herb	Root	Rheumatism

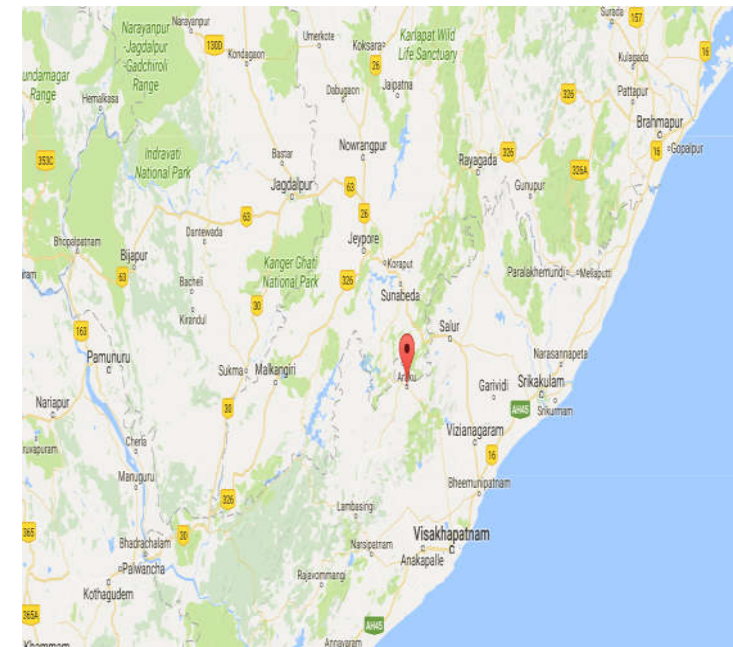
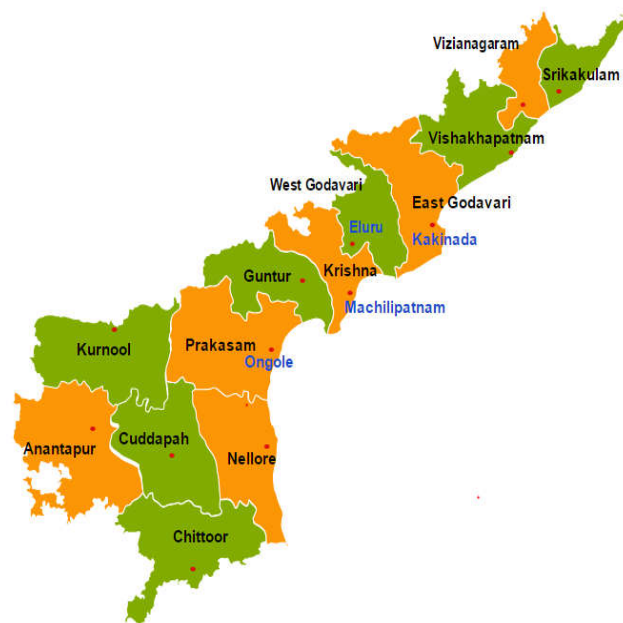


Fig.1. Map showing the location of surveyed place

Table 2. List of the number of species in each family (supplementary data)

1.	Acanthaceae	7
2.	Acoraceae	1
3.	Agavaceae	1
4.	Aizoaceae	1
5.	Alangiaceae	2
6.	Amaranthaceae	9
7.	Anacardiaceae	1
8.	Annonaceae	1
9.	Apiaceae	1
10.	Apocynaceae	6
11.	Araceae	2
12.	Arecaceae	2
13.	Aristolochiaceae	1
14.	Asclpiadaceae	7
15.	Asteraceae	15
16.	Asphodelaceae	1
17.	Basellaceae	1
18.	Bignoniaceae	1
19.	Boraginaceae	3
20.	Brassicaceae	2
21.	Burseraceae	1
22.	Cactaceae	2
23.	Caesalpinaceae	5
24.	Cannabaceae	1
25.	Capparaceae	3
26.	Caryophyllaceae	1
27.	Cleomaceae	2
28.	Combretaceae	2
29.	Convolvulaceae	2
30.	Crassulaceae	2
31.	Cucurbitalis	1
32.	Cucurbitaceae	5
33.	Cyperaceae	1
34.	Euphorbiaceae	9
35.	Fabaceae	25
36.	Hernandiaceae	1
37.	Hypoxidaceae	1
38.	Lamiaceae	7
39.	Leguminosae	4
40.	Liliaceae	3
41.	Lythraceae	2
42.	Malvaceae	12
43.	Meliaceae	4
44.	Menispermaceae	2
45.	Mimosaceae	3
46.	Mimosoideae	1
47.	Molluginaceae	3
48.	Moraceae	7
49.	Moringaceae	1
50.	Myristicaceae	1
51.	Myrtaceae	1
52.	Nyctaginaceae	2
53.	Olacaceae	1
54.	Palmae	1
55.	Papaveraceae	1
56.	Passifloraceae	1
57.	Pedaliaceae	1
58.	Phyllanthaceae	1
59.	Piperaceae	1
60.	Plumbaginaceae	2
61.	Poaceae	4
62.	Polygalaceae	1
63.	Primulaceae	1
64.	Punicaceae	1
65.	Ranunculaceae	1
66.	Rosaceae	1
67.	Rubiaceae	3
68.	Rutaceae	2
69.	Santalaceae	1
70.	Sapindaceae	2
71.	Selaginellales	1
72.	Solanaceae	5
73.	Sterculiaceae	2
74.	Tiliaceae	4
75.	Ulmaceae	1
76.	Verbenaceae	3
77.	Zingiberaceae	1
78.	Zygophyllaceae	1

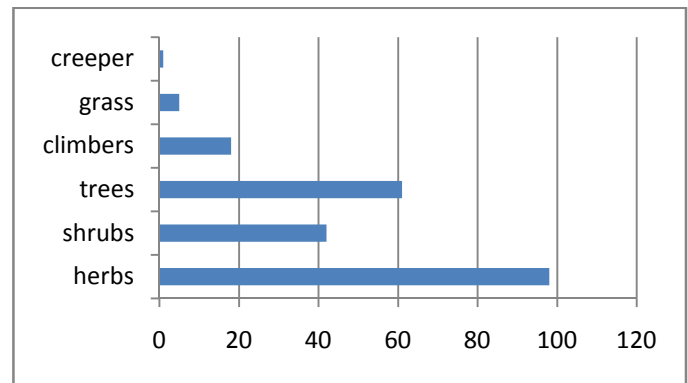


Fig.2. Growth habit of the medicinal plants on the current study

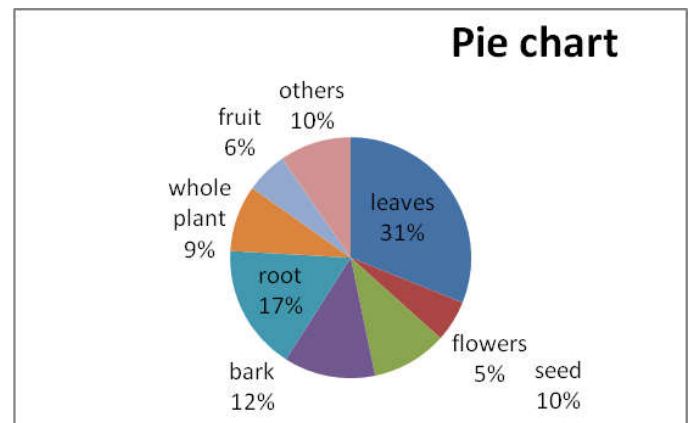


Fig.3. Percentage of parts of the plants used as medicine

## DISCUSSION

From this survey we have recorded 226 plants belonging to 78 families, most of the plants belong to Fabaceae family in earlier research even they could find most of the plants belong to Fabaceae family (Srinivas Rao, 2015; Sadale and Karadge, 2013) Fabaceae is of great ethnobotanical importance in indigenous and urban communities throughout the world. Their medicinal value lies partly in their effectiveness in the treatment of a wide variety of human ailments. The variety of chemically active constituents, such as tannins, flavonoids, alkaloids, and terpenes often found in members of this family, are substances with a high level of biological activity, and the fact that they are used extensively would suggest a pattern of global ethnomedical knowledge (Molares and Ladio, 2012). Herbs were the primary source of medicine (44%) followed by trees (27%), shrubs (19%) and climbers (8%) (Fig. 2). The frequent use of herbs among the indigenous communities is a result of wealth of herbaceous plants in their environments (Tabuti *et al.*, 2003; Ayyanar and Ignacimuthu, 2005; Uniyal *et al.*, 2006; Ragupathy *et al.*, 2008; Giday *et al.*, 2010) and in this area more number of herbs are found as compared to trees, shrubs and climbers (Manickam *et al.*, 2004). Among the plant parts, the leaves are most frequently used for treatment of diseases. The roots, fruits, bark, gum and latex, stem, seeds and flowers are also used as per their availability and curing ability. According to (Ganesan *et al.*, 2004) many indigenous communities elsewhere also utilized mostly leaves for the preparation of herbal medicines (Mahishi *et al.*, 2005; Ignacimuthu *et al.*, 2006; Ignacimuthu *et al.*, 2008; Teklehaymanot *et al.*, 2007; Srithi *et al.*, 2009; Giday *et al.*, 2010; Cakilcioglu and Turkoglu, 2010; Gonzalez *et al.*, 2010). The reason why leaves were used mostly is that they are

collected very easily than underground parts, flowers and fruits (Giday et al., 2009). In scientific point of view leaves are active in photosynthesis and production of metabolites (Ghorbani, 2005). The information of some useful medicines known to local people through their experience of ages is transferred from generation to generation. Traditional systems of medicine make use of nearly 7000 plant species. Out of the 17,000 economic species of angiosperms known worldwide, about 5000 occur in India. Of these, 3000 are medicinal plants in which root drugs constitute the largest number of species (680) followed by drugs originating from fruits (450) (Vanila et al., 2008). Many researchers and scientists are reported traditional uses of medicinal plants from different regions of India and world (Dama and Jadhav, 1998; Dama et al., 1998; Dama, 2002; Dama and Kirdak, 2002; Vikneshwaran et al., 2008; Badgujar et al., 2008; Bhosale et al., 2009; Dhole et al., 2009; Dhole et al., 2009; Hiramath et al., 2010; Sankaranarayanan et al., 2010; Jyothi et al., 2010; Dahare and Jain, 2010; Jawale et al., 2010; Jawale and Dama, 2010a; Jawale and Dama, 2010; Jawale et al., 2012).

The present investigation revealed that medicinal plants still play a vital role in the primary health care of the people. The information gathered from the tribal is useful for further researchers in the field of ethno medico-botany, taxonomy and pharmacology. This study offers a model for studying the relationship between plants and people, within the context of traditional medical system. The purpose of standardizing traditional remedies is obviously to ensure therapeutically efficacy. The value of using ethno medical information is to initiate drug discovery efforts. The medico-botanical survey of the area revealed that the people of the area possessing good knowledge of herbal drugs but as the people are in progressive exposure to modernization, their knowledge of traditional uses of plants may be lost in due course. So it is important to study and record the uses of plants by different tribes and sub-tribes for futures study. Such studies may also provide some information to biochemists and pharmacologists in screening of individual species and in rapid assessing of phyto-constituents for the treatment of various diseases.

## Conclusion

A total of 226 medicinal plants were surveyed in Araku valley of Visakhapatnam. Many of the plants were belonged to Fabaceae, Asteraceae, Malvaceae and Amaranthaceae. Most of the medicinal plant's whole parts of the plant is having medicinal value to cure different ailments. This indigenous knowledge can be utilized for further investigation by ethno botanists, pharmacologists and researchers.

## Acknowledgement

The authors are thankful to Kondadoras of Araku valley who, has shared their valuable information and provided samples for further investigation. Also, we are thankful to Integrated Tribal Development Agency (ITDA) and forest officials. Author is also special thanks to Mr. Ramesh naidu for his great encouragement during the study.

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