



## Research Article

## Ethnobotanical medicinal plants in ParammaKonda, Konada, Nareduvalsa and Jayathi Sacred Groves, Vizianagaram, AndhraPradesh, India.

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**Abstract:** Sacred Groves are the places of Natural vegetation being protected by the people with a firm belief on Nature and God. The tradition of worshipping nature, trees is a practise all over the world. This made them rich with flora and biological wealth. The groves are beneficial to mankind as they had medicinal, economical, agricultural and edible plants. The present groves are Parammakonda, Jayathi, Nareduvalasa and Konada. Ethnobotanical uses of 103 species belonging to 95 genera and 53 families used by the tribal Kondadora, fishermen and other people are identified and the local name, scientific name, family, habit and uses are documented during the study. Maximum species belong to Euphorbiaceae (8) and Fabaceae (8). The tribal people are using more plant species for treating skin diseases. The leaf part is profusely used followed by stem, root and fruit, trees are used mostly for the herbal medicine. Many plant species which are endemic, endangered and rare are also preserved in the groves. They are the repositories of genetic diversity and play an important role in cleaning environment. They play multifunctional role in local communities, thus there is an urgent need to conserve them and to protect the biodiversity.

**Key words:** Sacred grove, Repositories, genetic diversity, Biodiversity, ethnobotanical knowledge.

### Introduction

The faith and belief of god in humans is still exists though the science and technology developed in this world. People have been worshipping nature, trees, forests right from the Paleolithic age, there by preserving them (Frazer in the Golden Bough, 1935). The works like Ashtadhyayi, Vartika and Mahabhashya of Panini, Katyayani (5<sup>th</sup> century, B. C.), Patanjali (2<sup>nd</sup> century B. C.) mentioned a number of plants which shows their popularity during the period (Raghnatha 1987). In Rigveda, Atharvana veda, Upanishads, Mahabharata, Puranas we can come across the plant usage for worship, food, fuel, medicine, agricultural implements etc. Thus trees, forests are treated sacred.

Sacred groves are distinct segments of various landscapes containing trees and other life forms with various geographical features (Gadgil, Vartak 1975). In India 50, 000 sacred groves are reported as far. The tribal people have an intimate relationship with forests from ancient times. They preserve the forests in patches, worshipped them on the basis of religious, cultural aspects. Thus, patches gradually established in villages and being maintained as sacred groves. The tribal protect them and treat some trees sacred and consider them to ward off evils. These beliefs led to worship them by the people (Rajendran, 2004). In sacred forests of Devarakudas of Coorg, Karnataka, fire wood and construction materials were removed only for temple sake (Shri Satyan, 1971). So, they have the vegetation even not found in forests as they are protected.

The tribals are with various names as Vanavasi (forest inhabitants), Girijans (hill man), Janjathi (folk community) etc., The tribes of AndhraPradesh mainly confined to Eastern Ghats namely Konda Doras, Menna Doras, Jatapu, Savara, Nuka Dora, Gadaba respectively. The tribal in Paramma Konda grove are KondaDora and

Gadaba. They celebrate Sivarathri in this grove. They pray deities named Bangaramma, Nookamma and Desapu Thalli, they perform Bangaramma festival on the immediate full moon day next to Telugu festival Ugadhi. They hunt a squirrel and sacrifice it along with a hen and tie them to sticks and keep flowers and leaves of Wrightia tinctoria at the centre of their hamlet. They prepare porridges, sweets early in the morning and do not work all the day and this is done a week time. They don't even clean their houses. They perform various cultural activities, play drums and sprinkle colours. They start working normal after celebrating for week time. They go back to their routines likes hunting, collecting forest products etc. after a week. In Jayathi they celebrate Majjigamma festival during March first week for 3 days. Jatapu in Gorada celebrate Kandikothala during December, Sanapa during June, Sirasa during January after Pongal, along with Majjigamma festival. They pray Jakari devudu. In Konada they celebrate many festivals like Nukamma festival during Dusshera festival, Nelamma festival during October 1<sup>st</sup> week, Bapanamma festival during September. In Gorada, Jatapu celebrate Kandikothala, Sirasa, Sanapa festivals along with Majjigamma festival. Ethnobotanical uses of plants in many regions of Vizianagaram were recorded but the ethnobotanical uses of plants in the sacred groves of Eastern Ghats of Vizianagaram are not documented still.

### Study areas

The first grove Parammakonda is situated near Cherukupalli village in Salur mandal, Vizianagaram district. The grove is situated at 83.07° East and 18.28° North. The grove is a reserve forest nearly 150 acres which is a rocky hill with clayey loam soil. The forest is mixed deciduous type. It comes under the Kurkutti and Kotia hill forest range with altitude 1100-1200 m. There are two lakes near the grove. The rocky soils with clayey

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loam are seen. The dieties associated with this grove are Parvathi and Parameswarudu. Parvathi is called as Paramma by the local people. The idol Parvathi has 36 hands with one weapon each and Ganapathi temple is at the base of the hill. The tribal Kondadora and Gadaba are closely associated with this grove, living near by Cherukupalli village. They celebrate Bangaramma, Nukalamma and Desapu Thalli festivals also. *Ficus benghalensis*, a largest tree with 300cm girth and 20 mts height is present in this grove. The second grove is Jayathi, with an old temple complex in a ruined condition with 200 acres of land, red soil with a gentle slope is located 35km from Vizianagaram situated at 18.27° North and 83.33° East and Majjigamma god is worshipped here by all types of people. A big *Tamarindus indica* tree which is 15 metres girth and 30 metres height, *Anogeisus acuminata* with 5 metres girth and 10 metres height and *Phyllanthus emblica* with 10 metres height is and . 5 metres girth trees are there. The third grove is Nareduvalasa which is 5kms away from Kurupam, covering 200 acres, situated at 18.52° North, 83.34° East, the diety associated with the grove inside reserve foresr is Malathamma, there is a small temple at which tribals worship. There are big trees named *Basia latifolia*, *Bombax malabaricum*, *Mangifera indica* and *Terminalia tomentosa*. They celebrate Kandi panduga during the month of December after the harvest of red gram crop. The fourth one is Konada, at 18.02° North and 83.56° East, near the seashore in an area of 10 acres, which is 7km from national highway passing through Visakhapatnam and Srikakulam, near to it the river Champavathi merges with Bay of Bengal with sand and alluvial soil, sandy mounds. They pray Nelamma and Nukalamma deities, In Konada the Nukalamma temple is located near the shore with coastal Plantations of *Casuarina litorea* and *Pandanus odoratissimus*.



Fig. 1. Map showing Andhrpradesh in india and Vizianagaram district in Andhra Pradesh



Fig. 2. Map showing Vizianagaram district showing study areas

The main occupation of the people in surrounding villages of Parammakonda, Jayathi and Nareduvalasa is agriculture. The crops like Red gram, Green gram, Paddy, Maize, Sugarcane, Cow pea, Black gram are grown by these people. The fishermen in Konada has fishing occupation and they grow Casaurina, Eucalyptus plantations They use *Albizzia odorotissima*, *Dalbergia latifolia*, *Cassia auriculata*, *Tectona grandis*, *Chloroxylon sweitenia*, *Lannea coromandilica*, *Cleistanthes collinus*, *Anogeisus latifolia* and *Lagerstroemia parviflora* for house construction. They are using *Strychnos nux vomica* branches for superstitions like preventing evils and Kondadora in Parammakonda use *Wrightia tinctoria* branches for keeping squirrel to sacrifice which is a tradition practiced during their festival.

## Materials and Methods

Extensive field studies were made from the month of August 2015 to March 16. Ethnobotanical uses of the plants and their local names were documented and the plants were identified with the flora of Vizianagaram by VenKaiah. M and other floras of Andhra Pradesh, medicinal plants of Andhra Pradesh. I reached the groves by a vehicle and by walk. We have taken help from the college students to get intimacy with the tribes. The names, uses of the plants were noted by interviewing the elders, house wives and old people. The head men of the surrounding villages Chelluru Chukarayya, Kota thavudu and mediciman Mandali Dombayya, Gurala Ramanna, Dhanga Dhanayya, helped in giving the information. The plants were poisoned, made into herbarium. I prepared a questionnaire and asked questions in the following manner to the tribal people for gathering information. The following information was gathered by me after a questionnaire according to proforma for field work by S. K. Jain and A. K. Goel. (1987).

- The demographic characteristics of the informants.
- The pharmacological knowledge about the plants in the grove.
- The Ethnobotanical knowledge of the tribe about the plants.
- The following tribals are interviewed in the grove.

## Results

Traditional practitioners mostly use leaf (72) for the medicinal purposes, then stem (34), root (25), fruit (20), plant (15), seed (13), Latex (7) and flower (4) uses. Mostly skin diseases are cured by them for which they are using 35 plants, then for wounds with 30 plants, gastro intestinal disorders 24, respiratory diseases 20, gynec related 10, body pains 7, deworming 6. *Aegle marmelos* occupies first in curing 8 diseases, then *Tephrosia indica* and *Tylophora indica* occupies with 5 uses each. Some economically important plants are there used in agriculture, killing fishes and intoxicating beverages. Mostly trees are used for the medicine which are 38, shrubs 25, herbs 20 climbers 6, twiners 6, Creepers 2, stragglers 2, Rhizomes 2, Corm 1, Trailer 1. Fabaceae with 9 plant species occupies first and Euphorbiaceae with 8 plant species next in using for medicine, then Caesalpiniaceae 5, Asclepiadeceae, Malvaceae, Solanaceae and Rutaceae 4 each, Acanthaceae, Apocyanaceae, Convolvulaceae, Meliaceae, Menispermaceae and Moraceae 3 each. Among them monocots are 11 and remaining 92 are dicots. .

## Discussions

Medicines are prepared in various forms as powder, decoction, paste or extract. Along with medicine they are using honey, buttermilk or milk as constituent. The knowledge of these tribes is similar with other tribes. The milky juice of the leaves of *Caesaria elliptica* are mixed with water and used as fish poison by the tribal people of Malkangiri district, Orissa. (Patnaik et al, 2007). People of Garhwal region, Uttarakhand Himayala are crushing and grinding fruits of *Casaria elliptica* as fish poison in stagnant or semi stagnant pools, slow flowing rivers, streams for fish catch (Negi and Kanwal, 2009), here the tribals are also using fruits in the same way as piscidal and these tribals are using fruit pulp of *Strychnos potatoruma* and leaf paste of *Balanites aegyptica* also used as piscidal.

The different parts of same plant species is used in different forms, for different ailments. The leaf paste of *Argemone mexicana* is applied to cure wounds by the peliyar tribes in Theni district of Tamilnadu where as the tribals in Parammakonda use the latex of the plant to cure conjunctivitis. Same disease is cured by different parts of same plant. Skin diseases are treated by applying the seed oil of *Alangium salvifolium* by the people in Jayati, where as the ethnic people in the hilly tracts of East Godavari district apply leaf paste of the same plant to treat skin diseases (Ratnaraju et al., 2014). Some diseases are cured by the same plant as if the people living in the area of Jalgaon District traditionally use various parts of the plant *Ficus racemosa*, for their anti-diarrhoeal activity while the tribals in Konada also use stem bark paste for diarrhoea for the children. The fishermen in Konada use Pandanus flowers for sedation and leaves for making hats, mats. The people of Kerala produce Kewda oil, Kewda water and Kedwa atar from male inflorescence which are useful in perfumery and flavouring products and fragrance (Silja et al., 2009). In "Unique Pandanus- Flavour, food and medicine" (Singh Gurmeet and Parle Amrita, 2015) the roots are used in curing female sterility and preventing miscarriage. The tribe in Paramma konda uses the leaf paste of *Pterospermum xylocarpum* for leucorrhoea same as Konda reddis of Andhra Pradesh (Raju and Panduranga, 2011). The people in Konada sacred grove uses seeds of *Caesalpinia bonduc* in treating hydrocele, same as mentioned by Aswani Kumar (science 2. 0) while leaf paste is used by people in Adilabad. (Ramakrishna et al., 2014), Seed dal is macerated with egg yolk and applied as lotion by the tribals in East Godavari (Venkatesh and Khasim). Some diseases like snake bite is treated by different plants in these groves. The tribe Kondadora in Parammakonda use fruits of *Naringi crenulata*, Jatapu of Nareduvalasa use *Alangium salvifolium*, the fishermen in Konada use *Aristolochia indica* and the people in Jayati use *Ailanthes excelsa* tree for snake bite.

## Conclusions

The knowledge in the people is going to be diminished due to various reasons like modernization of their civilization and life style, culture changing to urban pattern, youth not interested in the treatment and people going to urban areas. So, knowledge is not transferring to next generations. The rich plant lore, the knowledge about the uses of plants among the tribals which is being passed only verbally to the next generations should be recorded urgently. It should be noted authentically by research and should be documented. As these are sacred groves the rich vegetation is preserved and biodiversity, insitu conservation is being seen here. Sacred groves in

general act as a nursery and store house of many of the local ayurvedic, tribal and folk medicines. (Bhakat and Pandey, 2003). It is a hope that, in the future, ethnobotany may play an increasingly important role in sustainable development and biodiversity conservation (Rajasekaran & Warren, 1994). In these days loss of vegetation is being seen in tribal areas due to encroachment, deforestation, urbanization and exploitation of forest resources, hence sacred groves should be protected and their importance should be recognized by the tribal and other people. This ethnomedicine forms the basis for further research in pharmacology to investigate a range of medicines for curing many diseases.

**Table.** Scientific name of the plants, common name, habit, drug preparation, dosage, disease cured.

S. No.	Name of the person	Name of the tribe.
1	Mandala Sanyasi	Gadaba.
2	Betukuri Kurmayya	Kondadora
3	Betukuri Prasanth	Kondadora
4	Sondi Dollayya	Gadaba
5	Chokkapu Thombarayya	Gadaba
6	Chelluri Lachamma	Gadaba
7	Chelluri Sanyasamma	Gadaba
8	Mandala Bochamma	Gadaba
9	Kota Thavudu	Gadaba
10	Puvvala savitri	Jatapu
11	Mandangi Bhogi	Jatapu
12	Patthika Doramma	Jatapu
13	Vedigala Parayya	Kondadora
14	Gurala Polamma	Fisher woman
15	Dhonga Bhooloka	Fisher man

**Table 3.** Other uses and no. of taxa, plants

Use	Plants	No. of taxa	No. of reports
Piscicidal	<i>Balanites aegyptica</i> (1), <i>Caesaria elliptica</i> (1), <i>Cleistanthes collinus</i> (1), <i>Strychnos potatorum</i> (1)	4	4
Agricultural related	<i>Abrus precatorius</i> (2), <i>Anogoeissus acuminata</i> (2), <i>Pterospermum xylocarpum</i> (1), <i>Tiliocora acuminata</i> (1)	5	6
Intoxicating beverages	<i>Pandanus fascicularis</i> (1), <i>Phoenix sylvesteris</i> (1)	2	2

**Table 1:** Scientific name of the plants, common name, habit, drug preparation, dosage, disease cured

Botanical name of the Plant and voucher/ specimen code	Vernacular name	Family	Habit	Useful part	Mode of preparation/ mode of use	Dosage	Disease cured	Name of the grove
<i>Abrus precatorius</i> L. ANUBH 100342	Guruvinda	Fabaceae	Woody twiner	Root Seed	decoction pulp	1 spoon twice daily With Jaggery taken as pill	Cough and Cold Contraceptive	J
<i>Abutilon indicum</i> L. ANUBH100304	Tuttura benda	Malvaceae	Shrub	Leaf	Cooked as vegetable.	Eaten for 40 days	Piles.	P,N,J,K
<i>Acacia arabica</i> (Lam.) Willd. ANUBH 100343	Nalla thumma	Mimosaceae	Tree	Stem bark	Paste	5gms with ghee for a week	Cures leucorrhea.	P,N,K
<i>Acampe praemorsa</i> Roxb. ANUBH 100384	Kukkina	Orchidaceae	Epiphyte	Leaf	Paste	As bandage	Bone fractures	N
<i>Acalypha indica</i> L. ANUBH 100383	Muripindi	Euphorbiaceae	Herb	Leaf	Leaf is crushed and applied with Azadirachta indica oil	Topical application	Skin diseases.	P,N, J, K
<i>Aegle marmelos</i> L. ANUBH10030382	Maredu	Rutaceae	Tree	Fruit	Juice Pulp	Wash the wounds, ulcers thrice a day Topical application	Wounds, ulcers	P, J
<i>Ailanthus excelsa</i> Roxb. ANUBH 100385	Pedda amnu	Simaroubiaceae	Tree	Leaf	Soaked in water over night paste	Eaten water drunk early morning Topical application at the place of snake bite	Dysentery, Diarrhea Ulcers in stomach Snake bite	J
<i>Alangium salvifolium</i> (Linn.f.) ANUBH100386	Oodika	Alangiaceae	Shrub	Root bark Stem bark	Bark paste made with water applied at the place of snake bite Paste	Weight of 40 wheat grains taken as pill Twice a day for 3 days	Snake bite Dysentery.	P,J
<i>Allium sativum</i> L. ANUBH 100381	Velluli	Liliaceae	Herb	Leaf bases	paste	I spoon ghee with little paste	Sciatica	P
<i>Amorphoballus paenifolius</i> (Dennstedt) ANUBH 100313	Kandha	Araceae	Herb	Corm	Powder made with equal quantity of dried corm, Terminalia chebula seeds, Andrographis paniculata leaves Decoction.	1 spoon with butter milk daily 2 times 25ml-50ml daily 2 times	Piles Cough	P,N
<i>Andrographis paniculata</i> (Burm.f.) ANUBH100324	Nela vemu	Acanthaceae	Herb	Plant	Plant liquid extract 50ml plant decoction with 2gm dry ginger powder	30-60 drops daily twice taken orally taken daily 2 times	Dysentery Jaundice	P, K, N, J
<i>Anogeissus acuminata</i> Roxb. ANUBH100397	Pasi chettu	Combretaceae	Tree	Stem Latex Root	Wood Applied as a lining on eyes. Extract made by macerating with roots of Cassia auriculata, Phyllanthus Neeruri and boiled in castor oil.	1 week thrice a day.	For tool handles and bullock cart body Conjunctivitis	J
<i>Argemone Mexicana</i> L. ANUBH100325	Balurakkasi	Papaveraceae	Shrub	Leaf Root	Extract made by macerating with roots of Cassia auriculata, Phyllanthus Neeruri and boiled in castor oil.	taken 1spoon, 2 times daily for 2 days	Diarrhoea	P,K
<i>Arisaema tortuosum</i> (Wall.) Schott & Endl. ANUBH100341	Sarikanda	Araceae	Herb	Corm	Cut as pieces and feed to cattle	Weekly twice	Deworming in cattle	N
<i>Aristolochia indica</i> L. ANUBH100345	Nagasaram	Aristolochiaceae	Twiner	Leaf Root	leaf juice Root paste	5-10ml taken orally Applied on the eye lid	Snake bite Ulcers close to eye.	P,N,K

				Leaf, Root	The leaf and root extract prepared as tablets in equal dosage.	taken daily 3 times	Whooping cough	
				Leaf	5 leaves and 10 pepper seeds extract prepared as tablets.	Given daily twice for a week	kills intestinal worms.	
				Whole plant	50-60ml decoction	Few days before delivery, 2 times a day	Easy parturation	
<i>Asparagus racemosus</i> Willd. ANUBH100310	Pilliteegalu	Liliaceae	Straggler	Root tubers	Paste made with turmeric Powder made into decoction	2 spoons twice daily for 3 days 2 table spoons for 2 months	Stomach pain. Kidney stones	J,N
					Dried root powder	1 table spoon with 1 cup of milk twice a day	Increases lactation.	
<i>Balanites aegyptica</i> L. ANUBH100310	Pedda gara or Pasupu gara	Zygophyllaceae	Tree	Leaf	Leaf paste	made in to small balls	Piscicidal	P
<i>Baliospermum montana</i> Muel. ANUBH100380	Nalla jidi	Euphorbiaceae	Shrub	Root	Paste	Topical application	Skin diseases	P
<i>Barleria prionotis</i> L. ANUBH100396	Mulla gorinta	Acanthaceae	Shrub	Leaf	Crushed along with Ocimum sanctum, Eclipta alba leaves	1 spoon daily until it gets cured	Jaundice.	P,K
<i>Bauhinia purpurea</i> Linn. ANUBH100309	Bodhanta	Caesalpinaceae	Tree	Flower buds	5-6 buds made as powder	Daily twice	Dysentery	P,N
<i>Caesalpinia bonduc</i> L. ANUBH100379	Gacha	Caesalpinaceae	Shrub	Seed	Paste	Topical application	Hydrocele.	K
<i>Casearia elliptica</i> Willd. ANUBH100344	Girigidi	Flacourtiaceae	Tree	Fruits	Fruit	pulp	Piscicidal.	P
						5-6 drops	Ear pain	
<i>Calotropis provera</i> (Ait.) R. Br. ANUBH100329	Jilledu	Asclepiadaceae	Shrub	Leaf	Latex	Applied on the skin.	Skin infections, dog bite.	K,J
<i>Carissa carundus</i> L. ANUBH100402	Vaka	Apocynaceae	Shrub	Leaf	leaves chewed	2-3 immediately after snake bite.	Snake bite	
<i>Caryota urens</i> L. ANUBH100302	Jeeluga	Araceae	Tree	Fruit	Ripen fruits	eaten	Cooling agent	J,K
				Toddy	Inflorescence	Applied on forehead as bandage	Headache.	J,K
				Leaf	The juice of tender leaves	applied on forehead.	Headache.	
<i>Cassia auriculata</i> L. ANUBH100333	Tangedu	Caesalpinaceae	Shrub	Flower	Dried flower with sugar made into powder	25mg taken 3 times a day for 20-30 days	Dysuria.	P,J
<i>Cassia occidentalis</i> L. ANUBH100346	Kasinda	Caesalpinaceae	Herb	Plant	Decoction	Daily 1 spoon	Dysentery and stomach pain.	P,K,J
<i>Casuarina equisetifolia</i> L. ANUBH 100314	Sarugudu	Casuarinaceae	Tree	Seed	Paste	Topical application	Head ache	K
<i>Celastrus paniculatus</i> Willd. ANUBH100311	Maneratiga	Celastraceae	Straggler	Seed	Oil is prepared	2-8 drops	General odema	P
				Fruit	Juice	20-30ml	Clears phlegm.	
<i>Celosia argentea</i> L. ANUBH100327	Gurungura	Amaranthaceae	Shrub	Leaf	Paste	Topical application	Wounds, skin diseases.	P,J
<i>Chloroxylon sweitenia</i> DC. ANUBH100316	Billudu	Flindersciaceae	Tree	Leaf	The leaves are warmed with castor oil	Topical application	Boils.	P
				Root	The root decoction with dry ginger.	taken 10 ml	intermittent fever	
<i>Cippadessa baccifera</i> (Roth.) ANUBH100330	Ranabilli	Meliaceae	Tree	Leaf	Leaf paste	Topical application	wounds, skin diseases	J

<i>Cissampelos pareri</i> L. ANUBH100320	Patitheega	Menispermaceae	Climber	Stem bark	Bark is macerated	Paste is applied on the skin	leprosy and skin diseases	P
<i>Cissus quadrangularis</i> L. ANUBH100394	Nalleru	Vitaceae	Climber	Stem	Paste	Tied as bandage	Fractured bones	N, K
					paste made along with <i>Alpinia galanga</i> and <i>Carum copticum</i> seeds	Eaten 1 spoon daily for 1 week	Clears phlegm in lungs	
<i>Citrullus colocynthis</i> L. ANUBH 100347	erri pucha	Cucurbitaceae	Trailer	Fruit				K
					Fruit with <i>Tribulus terrestris</i> fruit crushed	1 table spoon for 1 month	Asthma	
<i>Cleistanthes collinus</i> L. ANUBH 100326.	Odisi	Euphorbiaceae	Tree	Leaf Stem Bark/fruit/ Leaf	Tender leaf paste. Extract	Taken as small pills Dropped in lakes or ponds	Abortifacient Piscicidal	P
<i>Cleome viscosa</i> L. ANUBH100378	Kunkotlu	Capparidaceae	Herb	Seeds	boiled in water	Cup of water taken twice a day for 2 days	Relieves body pains and cold in pregnant ladies.	K
<i>Cyperus rotundus</i> L. ANUBH100348	Thunga	Cyperaceae	Herb	Rhizome	Tubers boiled in water and milk	For every 3 hours half spoon	Stomach ache and bowel complaints	K
<i>Dalbergia latifolia</i> Roxb. ANUBH100319	Iridi chettu	Fabaceae	Tree	Stem bark	Stem bark is pounded in water Stem bark powder mixed with coconut oil Leaf extract along with those of <i>Annona squamosa</i> leaf paste is made	5- 10 gms of powder taken orally with warm water 2 times a day Topical application	Body ache. Wounds.	N, P
<i>Datura metel</i> L. ANUBH100317	Umetha	Solanaceae	Shrub	Leaf	Leaves immersed in boiled castor oil	Applied on the hair	Kills lice	P, K
<i>Derris indica</i> Lam. ANUBH100393	Kanuga	Fabaceae	Tree	Seed	Powder	Applied on skin as 2- 3 layers	Boils	P, N
<i>Desmodium gangeticum</i> L. ANUBH100323	Kola panna	Fabaceae	Herb	Whole plant	decoction	1 spoon with water daily for a week 1 spoon daily for 15 days	Whooping cough Increases lactation	J
<i>Desmodium triflorum</i> L. ANUBH100349	Muntha mandu	Fabaceae	Herb	Whole plant	decoction	1spoon daily for 3 days	Dysentery	J
<i>Diospyros melanocylon</i> Roxb. ANUBH100331	Beedi aku	Ebenaceae	Tree	Leaf	Dried		Used in preparati on of beedi	N, J
<i>Erythrina indica</i> Lam. ANUBH100350	Badidha	Fabaceae	Tree	Leaf	Warmed along with castor oil	Put on head	Clears phlegm in children.	P, N

<i>Eupatorium odoratum</i> L. ANUBH100340	Gaju aku	Asteraceae	Shrub	Leaf	Extract	Topical application	Skin diseases and wounds.	P,J,K
<i>Evobulus elsinoides</i> L. ANUBH100375	Vishnu kranthi	Convolvulaceae	Herb	Plant	Paste	Topical application	Cuts, Wounds.	J,N,K
<i>Eucalyptus globulus</i> Labill. ANUBH100377	Nilagiri	Myrtaceae	Tree	Leaf	Boiled in water	Vapourisation	Head ache	K
<i>Euphorbia thymifolia</i> L. ANUBH100376	pachabotlaku	Euphorbiaceae	Herb	Whole plant	Decoction	1 spoon daily for a week	Deworming.	J,K
	Marri	Moraceae	Tree	Latex	Latex with bread.	1 table spoon with a piece of bread.	body pains	P,N,J,K
				Fruit	5gm fruit extract.	Applien on decayed tooth with hot milk daily take twice	Tooth cavities	
<i>Ficus benghalensis</i> L. ANUBH100307				Stem	Stem bark boiled in water and made decoction and jaggery, rice, blackgram are added	Eaten at night	Body pains	
		Moraceae	Tree	Plant	Latex	Topical application	Wounds	P,K
				Stem bark	Bark with honey or sugar made into extract	3 days ,1 spoon daily	Diarrhea.	
<i>Garuga pinnata</i> Roxb. ANUBH100351	Garuga	Burseraceae	Tree	Stem bark	Paste is made along with root of <i>Lannea coromandelica</i>	Bandage is made	Fractures	N
				Leaf	Juice	Topical application	Wounds and burns	
<i>Glycosmis maritima</i> Lam. ANUBH100320	Golimi	Rutaceae	Shrub	Whole plant	100ml Plant decoction	Taken orally	skin diseases like scabies, herpes,	N,K
				Leaf	Leaf paste	Applied on infected teeth	Cures pain.	
<i>Glycosmis pentaphylla</i> Retz. ANUBH100374	Gogulu	Rutaceae	Shrub	Leaf	Paste made with Ginger	Topical application	Skin diseases like Eczema.	N,J,K
				Stem bark	50 ml stem bark decoction prepared with 1gm dried ginger.	Daily twice	Piles	
				Leaf	100ml root decoction	Taken orally	Skin diseases like Eczema, ringworm.	
<i>Hemidesmus indicus</i> L. ANUBH100334	Sugandhipala	Periplocaceae	Twiner					P,N
				Root	Root extract prepared by macerating root with cow milk	Taken 5gm with 1 glass of milk for 3 days twice a day	Hoemorrhage.	
<i>Hibiscus vitifolius</i> L. ANUBH100328	Eenela chettu	Malvaceae	Shrub	Leaf	Paste	Applied on skin	Wounds and cuts	J,P
<i>Holarrhena pubescens</i> (Buch-Ham) ANUBH100336	Kodisapala	Apocyanaceae	Shrub	Root Bark	Bark decoction	30ml daily twice	Bleeding piles.	N, P

<i>Holoptelea intugifolia</i> Roxb. ANUBH100338	Mammali	Ulmaceae	Tree	Leaf	Chewed	3-5 leaves	Tooth pain	P
				Leaf	Leaf macerated with water applied on nails	Applied around the nail	Whitlow	
				Stem bark	Stem bark powder with butter milk	Taken daily for 6 months	Piles	
<i>Hyptis suaveolens</i> L. ANUBH100335	Seema tulasi	Lamiaceae	Shrub	Seed	Seed Soaked in glass of water	One week in the morning on empty stomach	Dysuria	P,K
					Seed paste	Topical application	Ulcers, Eczema, Boils, Sores	
				Leaf	5-10ml juice 10 ml juice 20- 40 ml decoction	For 1 month With lime water Twice a day	Gastric ulcers Stomach pain Spasmodic colic.	
<i>Ichinocarpus frutescens</i> L. ANUBH100318	Karrativva	Menispermaceae	Climber	Leaf	10ml juice	Daily	Diabetes	P
				Root	20-30 ml decoction	3 days	fever	
<i>Ipomea pes caprae</i> L. ANU BH100373	Beeda teega	Convolvulaceae	Creeper	Plant	Boiled in fermented starch	1 glass taken orally	Swellings during bruises	K
<i>Ipomea pestigridis</i> L. 100372	Meka maduga	Convolvulaceae	Twiner	Leaf	Poultice	Topical application	Boils, wounds.	K
<i>Jatropha gossypifolia</i> L. ANUBH100322	Adavi amudham	Euphorbiaceae	Shrub	Leaf	Paste	Topical application	Carbuncles, boils	
				Stem	Latex	Applied on skin	Wounds.	
<i>Justisia betonica</i> L. ANUBH100371	Soanudu	Acanthaceae	Shrub	Leaf	Leaf macerated and boiled in castor oil	As bandage on skin	Boils.	P,J,N,K
	Chennangi	Lythraceae	Tree	Leaf	Paste	Topical application	Swellings.	
<i>Lagerstroemia parviflora</i> Roxb. ANUBH100305				Leaf	Leaves with <i>Syzizium cumini</i> made into paste	Taken 2 spoons twice a day	Stomach pain.	P,N
<i>Lantana camera</i> L. ANUBH100395	Kampu rodha	Verbenaceae	Shrub	Leaf	Crushed and fried with ghee	Topical application	Pain during sprains and burns.	K
<i>Leptedaenia reticulata</i> Retz. ANUBH100398	Mukku thummu	Asclepiadaceae	Twiner	Root	Paste	Topical application	Boils	P,N
<i>Martynia annua</i> L. ANUBH100352	Telukondu	Martyniaceae	Shrub	Leaf	Juice	Gargle	Sore throat	K
<i>Moringa oleifera</i> Lam. ANUBH100353	Munaga	Moringaceae	Tree	Stem bark	Crushed with root bark of <i>Solanum surattense</i> , <i>Cuminum seeds</i> and made into paste	2 spoons twice a day for 3 days	Jaundice.	P,K
<i>Musa paradaisica</i> L. ANUBH100370	Arati	Musaceae	Rhizome	Rhizome	Boiled and with sugar candy water	2 spoons twice a day for 1 month	Cures erectile dysfunction in males.	N
<i>Mucuna pruriens</i> L. ANUBH100368	Durada gondi	Fabaceae	Tree	Seeds	Fried, outer layer is removed and powdered	1 tea spoon powder with milk	Cures male sterility	P,N
<i>Naringi crenulata</i> Roxb. ANUBH 100321	Torivelaga	Rutaceae	Tree	Seed	Seed extract.	\Daily 2gms for 5 days	Dysentery	P
				Fruit	Fruit paste	Paste applied on skin	Small. Pox	
<i>Nyctanthes arboristris</i> L. ANUBH100369	Parijatham	Nyctanthaceae	Tree	Leaf	Decoction by boiling paste of 10 leaves in 250ml water until it becomes 100 ml. and add sugar, 2gms dry ginger powder.	Daily twice	Sciatica and back pain.	K

<i>Pandanus odoratissimus</i> L. ANUBH100354	Mogali	Pandanaceae	Shrub	Flowers	Boiled in water	distillation	Intoxicating bevarage	K
<i>Pavetta indica</i> L. ANUBH100367		Rubiaceae	Small tree	Leaf	Warm paste	Topical application	Blisters	J
<i>Pedaliium murex</i> ANUBH 100364	Pedda palleru	Pedaliaceae	Herb	Leaf	paste	Topical application	wounds	N
<i>Pergularia daemia</i> Forsk. ANUBH100392	Dhustaputheega	Asclepiadaceae	Woody twiner	Leaf	Juice	Taken 6 drops with 1 spoon honey	Deworming.	P,J
<i>Phoenix sylvestris</i> L. ANUBH100391	Etha chettu	Arecaceae	Tree	Inflorescence	Juice	Fermented	Intoxicating bevarage	P,K
<i>Phyllanthus reticulatus</i> Poir ANUBH100337	Inkupallu	Euphorbiaceae	Shrub	Stem	Raw fresh bark	Chewed	Pyorrhea	P,J
<i>Phyllanthus emblica</i> L. ANUBH100366	Usiri	Euphorbiaceae	Tree	Fruit	Bark decoction	Applied on skin	Wounds	P,N
<i>Premna tomentosa</i> Willd. ANUBH100332	Kokkiti	Verbenaceae	Tree	Leaf	Juice	Topical application	Wounds	P,N
				Root	root paste	5- 10 gms root paste daily	Stomach pain	P
				Root	Root extract.	With cow milk applied on the skin	Skin diseases like herpes	
<i>Physalis minima</i> L. ANUBH100356	Seshu budama	Solanaceae	Herb	Plant	Juice	1 spoon daily	Laxative	J,K
<i>Pseudarthria viscida</i> L. ANUBH 100403	Nayakuponna	Fabaceae	Herb	Root	Decoction	1 spoon daily for a week	Deworming	J
<i>Pterospermum xylocarpum</i> Gaertn. ANUBH100389	Konda loluga	Sterculiaceae	Tree	Leaf	Paste along with honey	1 spoon daily twice for 3 days	Leucorrhoea	P,N
<i>Puppalia leppacea</i> L. ANUBH100365	Tella uttareni	Amaranthaceae	Herb	Stem	Wood		Bullock Cart body	
<i>Scoparia dulcis</i> L. ANUBH100399	Dakshini	Scrophulariaceae	Herb	Fruit	Pulp Mixed with palm oil	Topical application	Boils	P,J,K
				Leaf	Extract	Applied on decayed tooth	Tooth ache	J,P
<i>Solanum trilobatum</i> L. ANUBH 100357	Talla ushti	Solanaceae	Herb	Fruits	Pulp	2 fruits daily for a week	Cough	
				Leaf	Boiled	Water taken every day	Sinusitis	K
<i>Solanum surratense</i> Burm. f. ANUBH 100358	Nela vakudu	Solanaceae	Herb	Plant	Extract with honey	Every day 1 spoon	Asthma	
				Whole plant	powder	3 gms powder with honey	Cough.	K
				Fruit	Juice	5-10 ml for 3 days	Sore throat	
<i>Spinifex littorus</i> Burm. f. ANUBH 100363	Mulaguchi	Poaceae	Creeper	Root	Powder	With Carum copticum seeds	Stomach pain in children.	K
				Leaf	leaf poultice	Topical application	Leprosy, Swellings	
<i>Strebulus aspera</i> Roxb. ANUBH 100308	Baranikam	Moraceae	Tree	Seed	Paste	Topical application	Leucoderma	P,N
				Latex	In the early morning collected on the cloth and applied	Topical application	glandular swellings	
				Root	Root macerated with water and made as pills	10gms	Clears stones in kidney.	
<i>Strychnos potatorum</i> L. f ANUBH100339	Chilla ginja	Loganiaceae	Tree	Fruit	Vapour of root decoction	inhaled	Cold	P,N
				Leaf	Pulp		Piscicidal.	
				Leaf	Decoction	5-10 ml for 3 days	Cough	
<i>Strychnos nuxvomica</i> L. ANUBH100355	Mushidi	Loganiaceae	Tree	Stem	Bark is made into paste after roasting	Topical application	Cuts and wounds	P,J
				Stem branches		Kept before the houses	To ward off evils	
<i>Syzigium cumini</i> L. ANUBH100400	Naredu	Myrtaceae	Tree		Bath taken in water boiled with		Head ache and fever.	P,J

				Stem branches	branches and leaves				
<i>Tamarindus indica</i> L. ANUBH 100388	Chinta	Caesalpinaceae	Tree	Seed	Extract	2 gms extract with rice washed water daily twice	Leucorrhoea	J,K	
<i>Tarrena asiatica</i> L. ANUBH 100390	Papidi	Rubiaceae	Shrub	Stem bark	Paste made with <i>Wrightia tinctoria</i> bark The leaf paste is made along with <i>Acacia leucocephala</i> , <i>Croton bonplondianum</i> , turmeric and salt	3 spoons per day	Vomiting control.	J	
<i>Tephrosia purpurea</i> L. ANUBH100401	Vempali	Fabaceae	Herb	Leaf	Decoction	Topical application	Itching,	J,K,P	
<i>Thespesia populnea</i> L. ANUBH 100362	Ganga ravi	Malvaceae	Small tree	Fruit	Plant Pulp Juice	Taken orally 5- 10 ml Powder with turmeric paste Eaten daily 1 spoon for 3 days	Skin diseases and boils Pimples, Boils Dysentery.	K	
<i>Tiliocora acuminata</i> Dam. ANUBH 100387	Tivva mushidi	Menispermaceae	Climber	Stem bark Stem Branches	Paste Dried	Topical application	Skin diseases Scabies, Leucoderma Basket making and thatching	J	
<i>Tragia involucrata</i> L. ANUBH100306.	Teegadulagondi.	Euphorbiaceae	Climber	Fruit	Fruit extract with green grass Decoction with ginger	Feed to cattle 3 times a week Taken 5- 10 ml for 1 week	Deworming. Cold and Cough	P	
<i>Tylophora indica</i> Burm. F. ANUBH100361	Gorripala	Asclepiadaceae	Climber	Leaf	Chewed with black pepper Paste with honey	Taken for 30 days 1 table spoon for 10 days	Asthma Bronchitis, whooping cough	K	
<i>Wrightia tinctoria</i> (Roxb.) R. Br. ANUBH 100312	Ankudu	Apocyanaceae	Tree	Root	Powder with ghee	1 spoon daily for a week	Diarrhea and Dysentery.		
<i>Xanthium strumarium</i> L. ANUBH 100359	Marula mathangi	Asteraceae	Herb	Leaf	Medicine is prepared by mixing 250 gms of leaf extract with 1 litre coconut oil Latex	7 days sun dried and the paste is filtered and 1 spoon is taken daily evening. Topical application	Psoriasis Used for knee pains Skin diseases like herpes	P,N K	
<i>Zizyphus eonoplia</i> L. ANUBH 100360	Parimi	Rhamnaceae	Shrub	Root Stem bark Leaf	Paste decoction Paste	Topical application With ghee Taken bath Topical application	Herpes in mouth Skin rashes Pimples and acne	J,K	

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**Table 2:** Various diseases and no. of taxa, plants curing them.

Disease	Plant names with their uses	No. of taxa	No. of Use reports
Gastro intestinal	<i>Aegle marmelos</i> (3), <i>Alangium salvifolium</i> (1), <i>Andrographis paniculata</i> (1), <i>Argemone Mexicana</i> (1), <i>Asparagus racemosus</i> (1), <i>Bauhinia purpurea</i> (1), <i>Cassia occidentalis</i> (2), <i>Cissampelos pareria</i> (1), <i>Cyperus rotundus</i> (2), <i>Desmodium trifolium</i> (1), <i>Ficus racemosa</i> (1), <i>Hyptis suaveolens</i> (3), <i>Lagerstoemia parviflora</i> (1), <i>Naringi crenulata</i> (1), <i>Premna tomentosa</i> (1), <i>Spinifex litorius</i> (1), <i>Thespesia populnea</i> (1), <i>Tylophora indica</i> (2).	18	24
Skin problems	<i>Acalypha indica</i> (1), <i>Aegle marmelos</i> (3), <i>Acacia Arabica</i> (1), <i>Baliospermum Montana</i> (1), <i>Calotropis gigantea</i> (2), <i>Celosia argentia</i> (1), <i>Chloroxylon swietenia</i> (1), <i>Cipadessa baccifera</i> (1), <i>Cissampelos pareria</i> (2), <i>Datura metal</i> (1), <i>Eupatorium odoratum</i> (1), <i>Ficus racemosa</i> (1), <i>Glycosmis mauritiana</i> (2), <i>Glycosmis pentaphylla</i> (1), <i>Hemidesmus indicus</i> (2), <i>Hyptis suaveolens</i> (4), <i>Premna tomentosa</i> (1), <i>Tragia involucrata</i> (1), <i>Tephrosia purpurea</i> (5), <i>Thespesia populnea</i> (3), <i>Wrightia tinctoria</i> (1), <i>Xanthium strumarium</i> (1).	22	35
Respiratory problems	<i>Abrus precatorius</i> (2), <i>Andrographis paniculata</i> (1), <i>Aristolochia indica</i> (1), <i>Citrullus colocynthis</i> (2), <i>Cleome viscosa</i> (1), <i>Erythrina indica</i> (1), <i>Solanum trilobatum</i> (3), <i>Solanum surattense</i> (2), <i>Strychnos potatorum</i> (2), <i>Tylophora indica</i> (5)	10	20
Wounds	<i>Aegle marmelos</i> (2), <i>Celosia argentia</i> (1), <i>Dalbergia latifolia</i> (1), <i>Datura metal</i> (1), <i>Eupatorium odoratum</i> (1), <i>Evolvulus elsinoides</i> (2), <i>Ficus racemosa</i> (1), <i>Garuga pinnata</i> (2), <i>Hibiscus vitifolius</i> (2), <i>Hyptis suaveolens</i> (3), <i>Ipomea pes caprae</i> (2), <i>Ipomea pestigridis</i> (2), <i>Strychnos nux vomica</i> (2), <i>Jatropha gossypifolia</i> (2), <i>Lapptadenia reticulata</i> (1), <i>Pavetta indica</i> (1), <i>Pedaliium murex</i> (1), <i>Phyllanthus emblica</i> (1), <i>Phyllanthus reticulatus</i> (1), <i>Purpalia lappacea</i> (1)	20	30
Antihelminthic	<i>Arisaema tortosum</i> (1), <i>Aristolochia indica</i> (1), <i>Euphorbia thymifolia</i> (1), <i>Pergularia daemia</i> (1), <i>Pseudarthria viscida</i> (1), <i>Tragia involucrata</i> (1).	6	6
Laxative	<i>Desmodium gangeticum</i> (1), <i>Physalis minima</i> (1)	2	2
Piles	<i>Abutilon indica</i> (1), <i>Amorphophallus paenifolius</i> (1), <i>Hemidesmus indica</i> (1), <i>Holarbena pubescens</i> (1), <i>Holoptelea intugifolia</i> (1)	5	5
Bone fractures	<i>Acampe praemorsa</i> (1), <i>Cissus quadrangularis</i> (1), <i>Garuga pinnata</i> (1)	3	3
Jaundice	<i>Andrographis paniculata</i> (1), <i>Barleria prionotis</i> (1), <i>Moringa oleifera</i> (1), <i>Mucuna pruriens</i> (1).	4	4
Tooth problems	<i>Ficus benghalensis</i> (1), <i>Glycosmis marutiana</i> (1), <i>Holarbena pubescens</i> (1), <i>Jatropha gossypifolia</i> (1), <i>Phyllanthus reticulatus</i> (1), <i>Scoparia dulcis</i> (1)	6	6
Kidney stones	<i>Strychnos potatorum</i> (1)	1	1
Fever	<i>Chloroxylon swietenia</i> (1), <i>Ichnocarpus frutescens</i> (1), <i>Syzygium cumini</i> (1)	3	3
Head ache	<i>Caryota urens</i> (1), <i>Cassia auriculata</i> (1), <i>Casuarina equisetifolia</i> (1), <i>Eucalyptus globuli</i> (1), <i>Syzygium cumini</i> (1)	5	5
Dysuria	<i>Cassia auriculata</i> (1), <i>Hyptis suaveolens</i> (1)	2	2
Animal bite bite	<i>Ailanthus excelsa</i> (1), <i>Alangium salvifolium</i> (1), <i>Aristolochia indica</i> (1), <i>Calotropis gigantea</i> (2).	4	5
Body pains	<i>Cleome viscosa</i> (1), <i>Dalbergia latifolia</i> (1), <i>Ficus benghalensis</i> (1), <i>Ficus racemosa</i> (1), <i>Lantana camera</i> (1), <i>Nyctanthes arbostris</i> (1), <i>Wrightia tinctoria</i> (1)	7	7
Sciatica	<i>Allium sativum</i> (1), <i>Nyctanthes arbostris</i> (1).	2	2
Gynic related	<i>Abrus precatorius</i> (1), <i>Acacia arabica</i> (1), <i>Aristolochia indica</i> (1), <i>Asparagus racemoses</i> (2), <i>Desmodium gangeticum</i> (1), <i>Ficus racemosa</i> (1), <i>Desmodium gangeticum</i> (1), <i>Pterospermum xylocarpum</i> (1), <i>Tamarindus indica</i> (1)	9	10
Eye problems	<i>Argemone Mexicana</i> (1), <i>Aristolochia indica</i> (1)	2	2
Ear problems	<i>Calotropis gigantea</i> (1)	1	1
Male problems	<i>Musa paradaisica</i> (1), <i>Mucuna pruriens</i> (1)	2	2
Swellings	<i>Ipomea prescaprae</i> (1), <i>Strebulus aspera</i> (1)	2	3
Vomiting control	<i>Tarrena asiatica</i> (1)	1	1

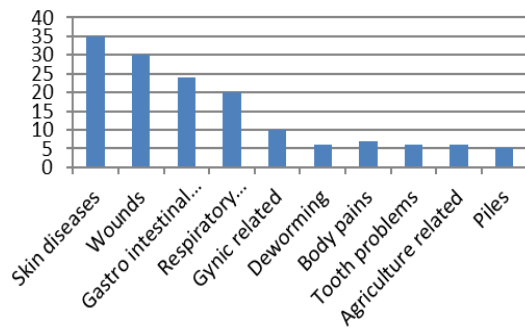


Fig. 3. Number of plants curing various diseases

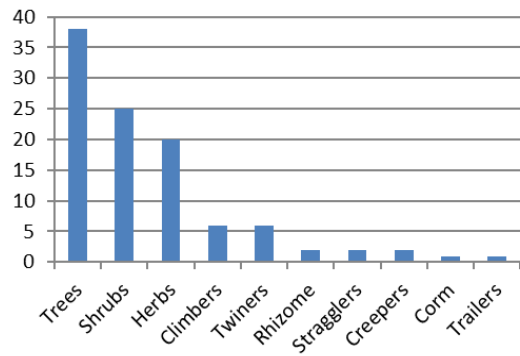


Fig. 4. Number of plants per habitat

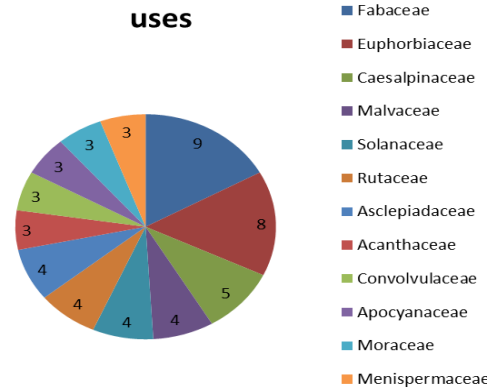


Fig. 5. Top 12 families with more uses

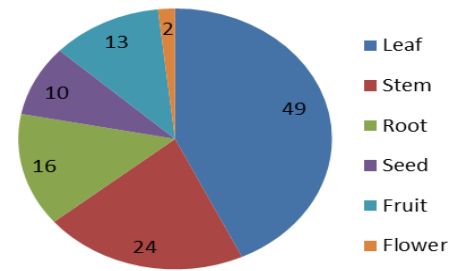


Fig. 6. Number of uses per part



Fig.7. *Wrightia tinctoria*



Fig.8. *Cippadessa baccifera*



Fig.11. *Solanum trilobatum*



Fig.12. *Spinifex littorius*



Fig.9. *Scoparia dulcis*



Fig.10. *Strychnos nuxvomica*



Fig.13. *Pandanus odoratissimus*



Fig.14. *Pseudarthria viscida*



**Fig.15.** Interview with medicimen at Konada

**Fig.16.** Festival at parammakonda



**Fig. 17.** Plantation at parammakonda

**Fig.18.** Old tamarindus tree at Jayathi



**Fig.19.** Parammakonda grove



**Fig.20.** Jayathi grove



**Fig. 21.** Nareduvalasa grove



**Fig. 22.** Konada grove

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