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Medicinal plants of tribal traditional system from Guntur district, Andhra Pradesh, India

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ABSTRACT

Objective: To enumerate the medicinal plants used by the tribals of Guntur district in their traditional system for the cure of various human ailments. Very few ethnobotanical studies are reported from Guntur district.

Methods: The data on ethnobotanical and ethnomedicinal plant species was collected during 2015-2016 through regular intensive field trips of 2-3 weeks duration to the tribal habitats. The standard ethnobotanical methods of Jain were followed for the data collection. First-hand information on tribal medicine was recorded and repeated enquiries were made to ascertain tribal knowledge, method of disease diagnosis and treatment. Data on plant local name, part of plant used in the drug, method of administration and dosage along with precautions to be followed were collected. The identification of plant species was made with the help of authentic published flora.

Results: The present study provides information on 67 ethnomedicinal plant species used by tribals of Guntur district for the treatment of 69 human ailments. Plant species such as *Alternanthera sessilis, Annona squamosa, Carica papaya* and *Givotia moluccana* were used each in the treatment of five diseases. The literature search on tribal ethnomedicine revealed striking coincidences in the ailment and plant species used by various tribes and provides ethnobotanical lead that makes *Gymnema sylvestre, Aristolochia indica, Calatropis gigantia* and *Phyllanthus amarus* a valuable source of a raw materials for further critical evaluation by the pharmacologists and phytochemists.

Keywords: Ethnic Tribes, Guntur district, Ethnomedicines, Ethnobotanical leads, Traditional practices.

INTRODUCTION

In India the aboriginal tribes use 8000 wild plant species for medicinal purposes (Pushpangadan and Pradeep 2005). These communities depend mostly on plants as source of medicine to treat their ailments since modern medicines are out of their reach and unaffordable by them. In recent times the

importance of traditional knowledge in drug development is much appreciated and even developed countries are inclined to the use of traditional medicinal system that involves the use of herbal drugs and remedies (Lanfranco 1992).

The leads of traditional knowledge system help to reduce the three main hurdles (time, money and toxicity) in drug development. The information obtained through traditional medicine helps a useful pre-screen to select plants for experimental pharmacological studies (Bigoniya 2008). Moreover, the success rate of finding an useful bioactive molecule through selective screening based on ethnobotanical leads is 50 times greater than it was through random screening (Pushpangadan et al 2016). Hence, an inquiry into documentation of medicinal plants used in the traditional health practices of tribals in Guntur district becomes very pertinent study.

METHODOLOGY

The Guntur district is one out of the eight coastal districts of Andhra Pradesh. It is in the centre of the state arched over either sides by the 12 districts of AP state. The Guntur district is bounded on the east by the Bay of Bengal, on the west by Mahaboobnagar and Kurnool districts on the south by Prakasam district and on north Krishna and Nalgonda districts. The district lies between 15^0 18^1 and 16^0 50^1 of northern latitudes and 79^0 10^1 and 80^0 55^1 of eastern longitudes. The major tribes of the district are Sugali, Chenchu, Koya, Yerukala and Yanadi. The three tribal villages considered for data collection are part of Achampet mandal in Guntur district.

The information on plants used in medicinal practices of tribals has been collected during 2015-2016. The field trips of 2-3 weeks duration were made to the tribal villages (Neeleswarapalem, Putlagudem and Talvay Thanda) in Achampet mandal, Guntur district, AP. The local knowledgeable people and tribal medicine-men were asked to explain how different plants were used in the cure of diseases. Their narration about local plants has been on spot recorded and subsequently they have been accompanied to locate the plants in their natural habitat.

The data on plant part used, preparation of drug, dosage and method of administration were noted down. The plants were photographed and plant specimen were collected to keep them as herbarium voucher specimen. The plants were identified with the help of floras published by Gamble & Fischer (1935) and Pullaiah et al (2000).

RESULTS

The present study reports 67 medicinal plant species used in the therapeutic practices by the tribals in Achampeta mandal (Guntur district, Andhra Pradesh) to cure 72 ailments (Tables 1and 2).

Table 1: Enumeration of Ethnomedicinal Plants used by the tribals of Achampet Mandal, Guntur District (AP) India**.**

S.No	Plant name	Plant Local Name	Family	Ailment treated	Plant parts used in the preparation of drug and mode of administration
1.	*Acacia intsia*	Korinda Teega	Mimosoideae	1. Whooping cough	The fibre of the plant is wear around the neck as necklace for the relief from whooping cough.
2.	*Acacia leucophloea (Rosob,) Willd*	Thella Thumma	Mimosoideae	2. Dental Problems	The decoction made from the bark of this plant *Pentaptera arjuna* and along with dried ginger is gargled.
				3. Leucorrhea	The bark is ground with sugar and taken orally.
3.	*Acacia catechu*	Chandra thumma	Mimosoideae	4. Bone fractures	The leaves and flowers are ground with sesame (Sesamum indicum) oil and massaged over the fractured area.
4.	*Achyranthes aspera. L*	Uttareni	Amaranthaceae	5. Eye-infection in* cattle	Leaf paste made with butter milk and table salt is put in the eyes of cattle.
5.	*Aegle marmelos Corr.Serr.*	Maredu	Rutaceae	6. Diarrhoea 7. Dysentery 8. Fevers	Half ripe fruit is eaten to get relief from these ailments.
6.	*Aerva lanata (L.)*	Kondapindi	Amaranthaceae	9. Kidney Stones	The leaves are made into with jaggery and eaten to get relief.

Table 1: Continued…

S.No	Plant name	Plant Local Name	Family	Ailment treated	Plant parts used in the preparation of drug and mode of administration
7.	*Aloe vera (L.) Burm.f.*	Kalabanda	Liliaceae	10. Diabetes	The gel of the leaf is orally administered
				11. Burns	The gel is applied externally on burns
				12. Purgative 13. Abortifacient	The gel is a powerful purgative. In small does it clears constipation and larger does act as abortifacient.
8.	*Alternanthera sessilis (L.) R.Br.Ex.Dc*	Ponnaganti kura	Amaranthaceae	14. Insect bites 15. Snake bites 16. Dyspepsia 17. Anaemia 18. Constipation	The leaf juice is applied orally to get relief.
9.	*Andrographis paniculata (Burm.f) Wallich Ex Ness*	Nallavemu	Acanthaceae	19. Stomach ache	Leaf paste is mixed with honey is administered.
10.	*Annona squamosa l.*	Seethaphalam	Annonaceae	20. Abortifacient	Excess fruit eating by pregnant women leads to abortion
				21. Insect repellant	Leaves act as insect repellants
				22. Lice Killer 23. Sores 24. Boils	Seed paste applied to hair kills lice Sores and boils: leaf paste is applied on sores and boils
11.	*Aristolochia indica (L.)*	Nalla eswari	Aristolochiaceae	25. Snake bite 26. Scorpion bite	The leaf paste is applied locally on the place of bite
				27. Round worms	The plant juice is orally given to kill worms in stomach.
12.	*Asparagus racemosus Willd.*	Pillipeechara	Liliaceae	28. Impotency	The powder of dried bulbs is used in the treatment of impotency.
13.	*Atlantia monophylla (Roxb.)DC*	Adavi nimma	Rutacease	29. Skin diseases	The leaf paste mixed with leaves of *Aegle marrmelos* (Neredu) is applied over the effected skin.
14.	*Balanites eagyptiaca (L.) Del*	Gara chettu	Balanitaceae	30. Leprosy 31. Vitiligo	The leaf paste is externally applied to the effected parts.
				32. Sperm production	Intake of leaf juice improves sperm count
15.	*Bauhinia racemosa*	Are chettu	Caesalpinioideae	33. Dysentery 34. Fevers	The powder of dried flowers mixed with water and taken orally to control dysentery and fevers.
16.	*Biophytum nervifoilum Th.w*	Attapathi	Oxalidaceae	35. Impotency	Leaves of this plant and fruits of banyan tree are made into paste and mixed with sugar taken orally to get relief from impotency.
17.	*Butea monosperma (Roxb.) Taubert.*	Moduga	Faboideae	36. Snake bite:	The wood of this tree is ground with ginger and is given as an antidote for snake bite.
				37. Sperm production	The gum of the plant is orally taken to improve sperm count.
				38. Skin diseases 39. Gonorrhea	The leaf juice is applied externally to control skin diseases and taken orally to treat gonorrhea.
18.	*Caesalpinia decapetala (Roxb.)*	Chegudicha aku	Caesalpinioideae	40. Migraine	A few drops of leaf juice is put into eyes to get relief from migraine.
19.	*Canthium parviflorum Lam*	Balusu chettu	Rubiaceae	41. Dysentery	The decoction of root bark and leaf is orally administered to control dysentery

Table 1: Continued…

S.No	Plant name	Plant Local Name	Family	Ailment treated	Plant parts used in the preparation of drug and mode of administration
20.	*Calatropis gigantia (L.) Ait.t.*	Tella jilledu	Asclepiadaceae	42. Snake bite 43. Sores 44. Boils 45. Skin diseases	The leaf paste is orally applied on the place of snake bite. The latex of the plant is applied externally. The leaf paste controls skin diseases
21.	*Capparis zeylanica L.*	Are donda	Capparaceae	46. Bone fractures	Leaf paste mixed with castor oil is used in the bandages over fractured bones.
				47. Piles	Leaf paste is applied as poultice in treating piles
22.	*Carica papaya L.*	Boppayi	Caricaceae	48. Abortifacient:	Fruit induces abortion in pregnant women
				49. Laxative	Un-ripe fruit is a laxative.
				50. Dyspepsia	Ripe fruit is eaten to control dyspepsia
				51. Piles	The poultice of leaf is applied over piles.
				52. Galactogogue	The latex of the plant is applied over breasts for increased milk secretion of mothers.
23.	*Cassia fistula L.*	Rela	Caesalpinioideae	53. Haematorrhoea 54. Rheumatism	The leaf juice is orally administered to cure haematorrhea and externally applied in case of rheumatism.
24.	*Catunaregam spinosa (Thunb.)*	Manga chettu	Rutaceae	55. Headache	Root paste is applied on forehead to get relief from headache.
25.	*Chloroxylon swietenia DC*	Billudu	Rutaceae	56. Numbness 57. Haughtiness	The leaf juice is massaged on the body to get relief from the ailments.
26.	*Cissus quadrangularis L.*	Nalleru	Vitaceae	58. Diabetes 59. Stomach disorders 60. Paralysis	The Plant is dried powdered and taken orally with honey.
27.	*Coculus hirsutus (L.)Diels*	Duseti teega	Menispermaceae	61. Gout	The leaf juice mixed with curd and sugar is orally administered.
28.	*Corchorus aestuans L .*	Kalasakura	Tiliaceae	62. Sores	Leaf paste is locally applied on sores
				63. Rinderpest* 64. Tympanites*	The leaves are crushed in butter milk and orally given to cattle to control veterinary diseases (Rinderpest Tympanitis) in cattle.
29.	*Cymbopogon colaratus (Nees) stapf.*	Bodagaddi	Poaceae	65. Menstrual pains	Leaf juice is orally given to control menstrual pains.
				66. Fertility restorer	Leaves of this plant are crushed along with pepper seed and garlic into paste and orally given to restore fertility in women.
30.	*Datura stramonium L.*	Tella ummetha	Solanaceae	67. Asthma	The smoke of dried flowers is inhaled to get relief from asthma
31.	*Diospyros chloroxylon (Roxb.)*	Ullinda	Ebenaceae	68. Urinary problem:	The powder of dried flowers is mixed with water and orally administered.
				69. Ulcers	Leaf paste is locally applied on ulcers
32.	*Elytraria acaulis (L.f) Lindau*	Nelamarri / cheppuattaku	Convolvulaceae	70. Wounds 71. Boils	The paste of leaves is externally applied on wounds and boils.
33.	*Euphorbia nivulia Buch. Ham*	Akugemudu	Euphorbiaceae	72. Gout:	The decoction of root is orally given to treat gout.
34.	*Euphorbia tirucalli L.*	Kada gemudu / Chemudu kada	Euphorbiaceae	73. Cough:	The latex of this plant is applied on the throat and turmeric powder is sprinkled on it to control cough.
				74. Ear-ache	A few drops are sequeezed from gently heated ripe stem and put in affected ear.

Table 1: Continued…

S.No	Plant name	Plant Local Name	Family	Ailment treated	Plant parts used in the preparation of drug and mode of administration
35.	*Ficus mollis Vahl.*	Banda Junsi	Moraceae	75. Easy delivery of women	The gum of this plant is mixed in hot water and given to effect easy delivery in women.
36.	*Gardenia gummifera L.f.*	Bikki chettu	Rubiaceae	76. Sciatica 77. Rheumatism	The leaf juice is orally administered.
37.	*Givotia moluccana (L.) Seemann.*	Ponki / Poliki	Euphorbiaceae	78. Eczema 79. Skin diseases	The powder of dried seeds mixed with coconut oil and applied on effected parts externally
				80. Emetic 81. Laxative 82. Purgative	The leaf juice is orally administered to effect vomiting and motions.
38.	*Gymnema sylvestre (Retz.) R. Br.*	Podapatri	Asclepiadaceae	83. Jaundice 84. Diabetes	Leaf juice is orally taken to control jaundice and diabetes.
39.	*Helicteres isora L.*	Gubathada	Stereuliacease	85. Gout 86. Dyspepsia	The juice made with leaves of this plant + *Cassia lanceolata, Pterospermum suberifolium* + Palm candy +seeds of *Butea monosperma* is orally taken to cure gout and dyspepsia.
40.	*Hemidesmus indicus (L.) R. Br.*	Sugandhipala	Asclepiadaceae	87. Dyspepsia 88. Flatulence	The root paste mixed with a few drops of castrol oil and breast milk is orally given to infants with empty stomach to treat dyspepsia and flatulence in children.
41.	*Ichnocarpus frutescens L.*	Nalla teega	Apocynaceae	89. Snake bite 90. Scorpion bite 91. Insect bite 92. Sores:	The root paste is applied on the bitten spot The leaf paste is applied on sores and pustules
				93. Diuretic	The decoction of root is a diuretic.
42.	*Indigofera tinctoria L.*	Neeli mokka	Faboideae	94. Dental pain	The leaves are chewed for the relief from pain.
43.	*Ipomoea mauritiana Jacq.*	Bellapaku	Convolvulaceae	95. Bone fractures	The leaf paste mixed with egg yolk is applied externally on the part of fractured bone.
44.	*Jatropha glandulifera (Roxb.)* Red	Yerra dundiga	Euphorbiaceae	96. Pimples	Leaf paste made with warm water and turmeric powder is externally applied.
45.	*J.glandulifera (Roxb.)* White	Tella dundiga	Euphorbiaceae	97. Mouth Ulcers 98. Tonsilitis	The leaf juice mixed with water is gargled to got relief.
46.	*Kydia calycina Roxb.*	Kondapathi	Malvaceae	99. Atrabilis 100. Gout	Paste prepared with leaves of this plant and Cassia auriculata mixed with dates is orally given to get relief.
47.	*Lawsonia inermis L.*	Gorintaku	Lythraceae	101. Ulcers 102. Boils 103. Wounds	Leaf paste is externally applied on effected parts.
48	*Mitragyna Parvifolia (Roxb.) Korth.*	Battaganapu	Rubiaceae	104. Burns:	The Leaves are roasted, powdered, mixed with coconut oil and applied on burns with feathers.
49.	*Moringa oleifera Lam*	Munaga	Moringaceae	105. Factures	Leaves are boiled and poultice is applied on fractures.
				106. Anaemia	The leaf juice is orally given in treatment of anemia.
50.	*Pergularia daemia (Forsik.) Chior.*	Juttupaku	Asclepiadaceae	107. Sciatica	Leaf paste is externally applied.
				108. Rheumatic	Leaf paste is massaged over the affected parts.
				109. Pains 110. Asthma	Leaf juice is orally given to treat asthma

Table 1: Continued…

S.No	Plant name	Plant Local Name	Family	Ailment treated	Plant parts used in the preparation of drug and mode of administration
51.	*Phyllanthus amarus Schum & Thonn.*	Nela usiri	Euphorbiaceae	111. Jaundice	Leaf juice is orally administered to cure Jaundice.
				112. Menstrual pains	Leaf paste made with butter milk is orally taken to get relief from menstrual pains.
52.	*Phyllanthus reticulatus Poiret.*	Nallapulicheru	Euphorbiaceae	113. Carminative 114. Neuralgic	The leaf juice acts as carminative and neuralgic.
53.	*Piper betle L*	Tamalapaku	Piperaceae	115. Pyorrhea 116. Dyspepsia 117. Expectorant	The fresh leaves are chewed to get relief from pyorrhea and dyspepsia
54.	*Pterospermum, xylocarpum (Garrner).*	Tada Chettu	Sterculiaceae	118. Haughtiness 119. Gout 120. Dyspepsia	The leaves of this plant along with leaves of *Cassia lanceolata, Helicteres isora* and seeds of *Butea frondosa* are mixed with palm candy and made into a paste. It is administered orally to get relief from haughtiness, gout and dyspepsia.
55.	*Senna occidentalis (L.) Link*	Kasinda	Caesalpinioideae	121. Skin diseases 122. Paralysis	The leaf paste is externally applied to treat skin diseases. The leaf paste is mixed with butter and massaged over the affected parts
56.	*Strebulus aspera Lour.*	Palabarinka	Moraceae	123. Leprosy 124. Skin diseases	The decoction of the bark and dried leaves is orally given to treat leprosy. The leaf juice controls skin diseases.
57.	*Striga gesnerioides*	Nakkapeetaku	Acanthaceae	125. Piles:	The leaf paste is externally applied to cure piles.
58.	*Strychnos nux-vomica L.*	Mushti chettu	Loganiaceae	126. Neuralgia 127. Dysentery	Leaf juice is given orally in low dose to treat neuralgia and dysentery. Large doses are toxic.
59.	*Strychnos potatorum L.f.*	Chilla chettu	Loganiaceae	128. Spermatorrhoea	Seeds soaked for 12hrs in cow milk are eaten to treat spermatorrhoea.
60.	*Tabernaemontana divaricata (L.) R.Br.*	Nandivardhanam	Apocynaceae	129. Toothache 130. Conjunctivitis	The milky juice of leaf cures conjunctivitis and bark chewed controls toothache.
61.	*Tarenna asiatica (L.) Kuntze ex Schum*	Kommi	Rubiaceae	131. Stomach ulcers	The leaf juice controls stomach ulcers.
62.	*Tephrosia pupurea (L) pers.*	Vempali	Faboideae	132. Stomachache 133. Antihelmintic	The dried roots powder is mixed with hot water and is given orally to control stomachache and acts also as antihelmintic
63.	*Tribulus terrestris L.*	Palleru	Zygophyllaceae	134. Kidney problems 135. Impotency	The leaf juice is orally given to control kidney problems and to remove impotency.
64.	*Tridax procumbens*	Gaddi chamanthi	Asteraceae	136. Wounds 137. Boils	The juice is externally applied to heal wounds and boils
65.	*Urgenia indica (Roxb.) Kunth.*	Adavi vulli / Verri vulli	Liliaceae	138. Epilepsy 139. Boils	The paste of the bulb is externally applied on fore head and on affected part to treat epilepsy and boils.
66.	*Vitex negundo L.*	Vavili	Verbinaceae	140. Pain relief	The leaves are boiled in water along with leaves of Eucalyptus and Neem leaves and turmeric powder is added. This water is used for bathing of delivered women to get relief from delivery pains.
				141. Antihelmintic	The leaf juice is orally taken that acts as antihelmintic.
67.	*Ziziphus xylopyrus (Retz.) willd.*	Gotti	Rhamnaceae	142. Sores 143. Boils	The leaf paste is externally applied on boils and sores.

*Veterinary diseases

Table 2. Names of different ailments and plant species used to cure them

S. No	Name of the ailment	No. of plant species useful in the treatment	Names of plant species used in the treatment
1.	Abortifacient	2	*Aloe vera, Carica papaya*
2.	Anaemia	1	*Moringa oleifera*
3.	Anti-helmintic	2	*Tephrosia pupurea, Vitex negundo*
4.	Asthama	2	*Datura stramonium, Pergularia daemia*
5.	Atrabilis	1	*Kydia calycina*
6.	Boils	7	*Lawsonia inermis, Urgenia indica,Tridax procumbens, Ziziphus Xylopyrus, Elytraria acaulis, Annona squamosa, Calatropis gigantia.*
7.	Bone fractures	3	*Acacia catechu, Carica papaya, Ipomoea mauritiana*
8.	Burns	2	*Aloe vera, Mitragyna Parvifolia*
9.	Carminative	1	*Phyllanthus reticulates*
10.	Conjunctivitis	1	*Tabernaemontana divaricata*
11.	Constipation	1	*Alernanthera sessilis*
12.	Cough	1	*Euphorbia tirucalli*
13.	Dental pain or problem	1	*Acacia leucophloea*
14.	Diabetes	3	*Aloe vera, Gymnema sylvestre, Cissus quadrangularis*
15.	Diarrhea	1	*Aegle marmelos*
16.	Diuretic	1	*Ichnocarpus frutescens*
17.	Dysentery	4	*Bauhinia racemosa, Canthium parviflorum, Strychnos nux-vomica, Aegle marmelos.*
18.	Dyspepsia	5	*Alernanthera sessilis, Carica papaya, Pterospermu xylocarpum, Piper betle, Hemidesmus indicus.*
19.	Ear ache	1	*Euphorbia tirucalli*
20.	Eazy delivery	1	*Ficus mollis*
21.	Eczema	1	*Givotia moluccana*
22.	Emetic	1	*Givotia moluccana*
23.	Epilepsy	1	*Urgenia indica*
24.	Expectorant	1	*Piper betle*
25.	Eye infection in cattle*	1	*Achyranthes aspera*
26.	Flatulance	1	*Hemidesmus indicus*
27.	Fertility restorer	1	*Cymbopogon colaratus*
28.	Fever	2	*Aegle marmelos, Bauhinia racemosa*
29.	Galactogogue	1	*Carica papaya*
30.	Gonorrhea	1	*Butea monosperma*
31.	Gout	6	*Coculus hirsutus, Euphorbia nivulia, Helicteres isora, Kydia calycina, Pterospermum, xylocarpum, Andrographis paniculata*
32.	Haughtiness	2	*Chloroxylon swietenia, Pterospermum, xylocarpum*
33.	Head ache	1	*Catunaregam spinosa*
34.	Hematorrhea	1	*Cassia fistula*
35.	Impotency	3	*Asparagus racemosus, Tribulus terrestris, Biophyture nervifolium*
36.	Insect bite	2	*Alernanthera sessilis, Ichnocarpus frutescens*
37.	Insect repellent		*Annona squamosa*
38.	Jaundice	2	*Phyllanthus amarus , Gymnema sylvestre*
39.	Kidney stones	2	*Aerva lanata, Tribulus terrestris*

Table 2. Continued…

S. No	Name of the ailment	No. of plant species useful in the treatment	Names of plant species used in the treatment
40.	Laxative	2	*Carica papaya, Givotia moluccana Seemann.*
41.	Leprosy	2	*Balanites eagyptiaca, Strebulus aspera*
42.	Leucorrhoea	1	*Acacia leucophloea*
43.	Lice killer	1	*Annona squamosa*
44.	Menstrual pains	2	*Phyllanthus amarus , Cymbopogon colaratus*
45.	Migraine	1	*Caesalpinia decapetala*
46.	Neuralgia	2	*Phyllanthus reticulates Poiret, Strychnos nux-vomica*
47.	Pain relief	1	*Viter negundo*
48.	Paralysis	2	*Senna occidentalis, Cissus quadrangularis*
49.	Piles	3	*Carica papaya, Capparis zeylanica, Striga gesnerioides*
50.	Pimples	1	*Jatropha glandulifera*
51.	Purgative	2	*Givotia moluccana, Aloe vera*
52.	Pyorrhoea	1	*Pipper betle*
53.	Rinder pest*	1	*Corchorus aestuans*
54.	Ring worm control	1	*Aristolochia indica*
55.	Rheumatism	2	*Cassia fistula, Gardenia gummifera, Pergularia daemia*
56.	Sciatica	2	*Gardenia gummifera, Pergularia daemia*
57.	Scorpion bite	2	*Aristolochia indica, Ichnocarpus frutescens*
58.	Skin diseases	5	*Atlantia monophylla, Butea monosperma, Senna accidentails, Givotia moluccana, Strebulus terrestris*
59.	Snake bite	5	*Alernanthera sessilis, Aristolochia indica, Calatropis gigantia, Butea monosperma, Ichnocarpus frutescens*
60.	Sperm production	2	*Balanites eagyptiaca, Butea monosperma*
61.	Spermatorrhea	1	*Strychnos potatorum*
62.	Stomach ache	2	*Andrographis paniculata, Tephrosia pupurea*
63.	Stomach disorders	1	*Cissus quadrangularis*
64.	Sores	5	*Annona squamosa , Calatropis gigantia, Corchorus aestuans, Ichnocarpus frutescens, Ziziphus xylopyrus*
65.	Tonsillitis	1	*Jatropha glandulifera (white form)*
66.	Tooth ache / decay	3	*Corchorus aestuans, Indigofera tinctoria, Tabernaemontana divaricate*
67.	Timpanites*	1	*Corchorus aestuans*
68.	Ulcers	4	*Diospyros chloroxylon, Lawsonia inermis, Jatropha glandulifera (white form)*
69.	Urinary problems	1	*Diospyros chloroxylon*
70.	Vitiligo	1	*Balanites eagyptiaca*
71.	Whooping cough	1	*Acacia intsia*
72.	Wounds	2	*Lawsonia inermis, Tridax procumbens*

*Veterinary diseases

Table 3. Similarity exhibited in the different tribal phyto-therapeutic practices in respect of medicinal plant species.

S. No	Plant Name & its medicinal use	Used by the tribals of the area / District / State	Reference
1.	*Gymnema sylvestre* Antidiabetic plant	i. Tribes of Achampet Mandal, Guntur district Andhra Pradesh	Present study
		ii. Yanadi tribe of Sheshachalam hills, Kadapa & Chittoor district, Andhra Pradesh	Reddy et al (2009)
		iii. Sugalis tribe of Yerramalalais, Kurnool district, Andhra Pradesh	Basha & Sudarsanam (2010)
		iv. Yandi tribe of Penchalakona Forest, Nellore district Andhra Pradesh	Savithramma et al (2012)
		v. Tribe of Adilabad district Andhra Pradesh	Rama Krishna et al (2014)
		vi. Traditional healers West Godavari district Andhra Pradesh	Kadali & Sandeep (2015)
2.	*Phyllanthus amarus* Hepato-protective effect	i. Tribes of Achampet Mandal Guntur district Andhra Pradesh	Present study
		ii. Tribes of Khammam district, Andhra Pradesh	Manjula et al (2011)
		iii. Chenchu tribes of Nallamalais in Eastern Ghats Andhra Pradesh	Sabjan et al (2014)
		iv. Tribes of Achampet forest division, Telangana state	Reddy (2015)
3.	*Aristolochia indica* Anti-dote for snake bite	i. Tribes of Achampet Mandal, Guntur district, Andhra Pradesh	Present study
		ii. Tribes of Srikakulam district Andhra Pradesh	Rao & Sreeramulu (1985)
		iii. Bagata tribe of Eastern Ghats, Andhra Pradesh	Sandhya Sri & Reddy (2011)
		iv. Gonds tribe of Adilabad district Andhra Pradesh	Murthy (2012)
		v. Konda Reddi tribe of West Godavari district Andhra Pradesh	Prasanna Kumari & Vishnuvardhan (2017)
		vi. Sugali tribe of Krishna district, Andhra Pradesh	Nageswara Rao Naik et al (2017)
	Calotropis gigantia Anti-dote for snake bite	i. Tribes of Achampet Mandal, Guntur district, Andhra Pradesh	Present study
		ii. Tribes of Kotia hills, Vizianagaram district, Andhra Pradesh	Babu et al (2011)
		iii. Sugali tribe of Yerramalais, Kurnool district, Andhra Pradesh	Basha & Sudarsanam (2012)
		iv. Koya tribe of Warangal North forest division, Telangana state	Suthari et al (2014)
		v. Tribes of Achampet forest division Telangana state	Reddy (2015)

Out of the 72 ailments, three are of veterinary diseases and 68 are human ailments. The 68 plant species belong to 33 families. Fabaceae is the most dominant family with 10 species followed by Euphorbiaceae (7 sp), Rubiaceae (4sp), Rutaceae (4 sp), Asclepiadaceae (4 sp), Amaranthaceae (3 sp) and Liliaceae (3 sp). The families such as Acanthaceae, Apocynaceae, Convolvulaceae, Loganiaceae, Moraceae and Sterculiaceae are represented each with 2 species. Twenty families are represented by one species each. Many plants of present study are used in the treatment of more than one ailment. *Alternanthera sessilis* is used in the cure of anaemia, constipation, dyspepsia, snake bite and insect bite. Similarly, *Annona squamosa, Carica papaya* and *Givotia moluccana* are also used each in the treatment of five different ailments. Of the 67 species, seven species are used in the treatment of boils. The ailments such as dyspepsia, gout, snake bite, sores and skin diseases are treated with five species each (Table 2).

DISCUSSION

The Guntur is an important district being located in the capital region of Andhra Pradesh state and also centrally placed arched over on either sides by the remaining 12 districts. The district was floristically rich with 495 genera and 891 species (Pullaiah et al 2000). In 2001, Muralidhar Rao & Pullaiah made an attempt to study ethnomedicinal plants from Guntur district. Although Andhra Pradesh state was well studied ethnobotanically, the Guntur district received very little attention.

The resemblance between the health practices of different tribes in respect of ailment and plant species has been assessed and presented in Table-3. The tribals of Achampet mandal used *Gymnema sylvestre* plant in the treatment of diabetes. The Yanadi tribes of Seshachalam hills in Kadapa and Chittoor districts, Penchalakona forest area in Nellore district, Sugalis of Kurnool district and tribes of Adilabad district also used this plant in the cure of diabetes (Reddy et al 2009; Savithramma et al 2012; Basha & Sudarsanam 2012; Ramakrishna et al 2014). Also the traditional healers in West Godavari district used it in diabetes treatment (Kadali & Sandeep 2015).

The tribals of Achampet mandal (Guntur district, Andhra Pradesh) used *Phyllanthus amarus* to cure jaundice. Manjula et al (2011) Sabjan et al (2014) and Reddy (2015) reported that the tribes of Khammam district, Nallamalais in Eastern Ghats and Achampet forest division in Telangana region also use this plant to cure liver disorders.

The tribals of Srikakulam district, Bagatas of Eastern Ghats, Gonds of Adilabad district, Konda reddis of West Godavari district and Sugalis of Krishna district use *Aristolochia indica* in the treatment of snake bite similar to the tribal practice reported now from Achampet mandal, Guntur district (Rao & Sreeramulu 1985; Sandhya Sri & Reddy 2011; Murthy 2012; Prasanna Kurmari & Vishnuvardhan 2017; Nageswara Rao Naik et al 2017). In the present study *Calotropis gigantia* is another plant species used in the snake bite treatment similar to the practice of the tribes of Kotia hills Vizianagaram district, Yerramalais of Kurnool district, Achampet forest division and Warangal North forest division in Telangana (Babu et al 2011; Basha & Sudarsanam 2012; Suthari et al 2014; Reddy 2015).

The similarity in the use of particular plant species for a particular ailment by different, ethnic tribes signifies its profound medicinal value. Hence, Pharmacognostic and Phytochemical analyses in *Phyllanthus amarus, Gymnema sylvestre, Aristolochia indica* and *Calotropis gigantia* will result in useful bioactive molecules to treat diabetes, jaundice and snakebites.

CONCLUSION

In the Guntur district the tribals used 67 medicinal plants in their health care practices to treat 60 different human ailments. They depend mostly on plants in their vicinity and used them in curde drugs preparation to cure a broad spectrum of diseases. Some practices of the present study exactly resembled with the tribal practices from other districts of Andhra Pradesh and Telangana states. Such similarity between plant species and disease therapy can be considered as on useful lead in ethnobotanical research to provide a rich source of plant materials for bioactive compounds screening by pharmacologists.

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