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TRIBAL MEDICINE

Herbal Folklore Research Centre
Tirupati

CHITTOOR DISTRICT, A.P (INDIA)
Herbal medicines for birth control, ante- and post-partum treatments from Chittoor district, Andhra Pradesh, India

S VEDAVATHY*, V MRUDULA, A SUDHAKAR
Department of Botany, SRI Venkateswara Arts College, Tirupati - 5175502 (A P), India

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SUMMARY The report gives an account of the use of 35 plant species by the tribals and villagers in Chittoor District of Andhra Pradesh for birth control, ante- and post-partum services. The botanical name, locale name (Telugu), family, medicinal use and mode of administration, dosage, place of collection and voucher herbarium specimens are recorded

Key words: folk medicine, birth control, sterilization, contraception, abortion, ante and post-partum treatments, India

A systematic and intensive survey was conducted in sixty villages of Chittoor district, Andhra Pradesh, India, for folklore information about drug plants used for birth control. Many of the tribal communities and the villagers are backward and live in remote areas where modern health facilities are not available.

The tribals are well versed in folklore medicines and capable of identifying and nomenclaturing various kinds of ailments and diseases. Most of the tribal communities are so tradition oriented that they do not use the modern facilities even if available, due to lack of faith. Existence of independent medicine men in some villages, functioning side by side with the professionals employed by Government run institutions, is evident in some villages.

It has been noted that many cases of ante- and post-partum services, preventive health measures for the children, birth control measures, both permanent (sterilization) and temporary (contraception), are attended through informal approach at the community level i.e., services of mid-wives, experienced house-wives, local herbalists. Besides a few difficult cases, tribal women follow the traditional method of delivery (most of them deliver their babies by squatting on the ground). Village people are more shy and secretive than tribes men.

The modern contraceptives are mainly used by the urban people, while the rural and, especially, tribal people, away from the villages and towns, hesitate to use them as they are only familiar with herbal medicine. The use of herbal drugs for fertility control remains popular among the house-wives in rural areas

EXPERIMENTAL

Herbal folklore data were obtained in the rural areas of Chittoor district in 1994-1995, from tribal (Yanadi, Nakkala, Irula) and traditional healers, villagers having adequate knowledge of medicinal plants and house-wives, who know/practice herbal medicine. The authors adopted anthropological field techniques1,2 for field survey, without making use of questionnaires and structured interview schedules, but instead relying more on unstructured, personal interviews with the native informants. Detailed notes were taken as each specimen was discussed and collected in the field. The information and the plants collected were reviewed and the data were recorded on field labels and in sample cards. Detailed description of the method of preparation, time of administration, use and identification was recorded for each drug.

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RESULTS

The plants are separately reported according to the identified use: sterilization, contraception, abortion, ante- and post-partum treatment. In each section, plants are listed in alphabetical order of the botanical name; locale (Telugu) name, family, mode of administration and dosage, informant and place of collection, voucher herbarium specimen number are given.

Sterilization (irreversible) (Telugu goddu mandhu)

Adanthus excelsa Roxb., Pedda manu (Simaroubaceae)

The juice from the bark is mixed with honey or sugar and given for about a week either early in the morning or at bed time (SV Khasem Shaheeb, Natu Vaidhvudu; Yerra vari palem cross, SV 67)

Bambusa arundinacea Wild, Veduru (Poaceae)

Young fermented shoots are taken for about 1 month (Mid wife, Totti palli, SV 70).

Canavalia ensiformis DC, Thamba (Fabaceae)

Two to 3 fresh seeds mixed with a piece of fresh turmeric are made into paste and taken on the third day of delivery, for about 3 days. Sex is avoided for 6 months (Mid-wife, Chittathur; SV 94).

Cassia spectuosa Sm., Kevukinna (Zingiberaceae)

The consumption of the tuber in raw form for a fortnight leads to sterilization (House wife, Ramalingapuram, SV 90)

Mimosa pudica L., Attipatti or Tottala singi (Mimosaceae).

Leaves mixed with Pistia stratoites L. leaves and garlic are made into paste with brandy. Two to 3 ounces of juice or paste are given along with coconut water. This is repeated for 3 days (Paramala Ramaiah, Nagula cheruvu; SV 44).

Musa paradisiaca L., Arati (Musaceae)

Aqueous root extract, drunk daily during menstrual period for about 2 to 3 consecutive months, caused sterility in women. If taken by men for a month, it also results in permanent male sterility (Yeddula Gangulamma, Nelluru vandla palli; SV 110).

Pueraria tuberosa DC, Vidhari Kanda (Fabaceae)

The consumption of the tuber in raw form for about a month leads to sterilization. It is said by the tribals that the cooked tuber looses its contraceptive property (Irula, Nagula cheruvu; SV 54).

Rhus communis L., Castor, Arnudamu (Euphorbiaceae) and Tragia involucrata L., Nosantaku (Euphorbiaceae).

Young castor leaves mixed with equal quantity of Tragia leaves are made into paste. A spoonful of the paste is taken with rice water on the third day of delivery and continued 2 to 3 days (Gundla palli Akkamma; Tovva vandla palli; SV 99).
Contraception (reversible)

*Butea monosperma* (Lam.) Taubert, Moduga (Fabaceae).

Seed paste is applied to the vagina from the fifth day of menses to the thirteenth day (Irula; Nelluruvandla palli; SV 105)

*Cinnamomum zeiyianum* Blume., Dalchina chekka (Lauraceae).

Bark, mixed with equal quantity of fried borax, is made into powder. A spoonful of powder is taken along with warm water before the commencement of menstrual cycle, in order to temporary prevent conception (Mid-wife, Chittattur, SV 175).

*Hedyotis umbellala* Lam., Chiri veru (Rubiaceae).

Root paste, half an ounce, is taken along with rice water on the first day of menses and repeated for 3 to 4 days (Y. Gangulamma; Tottipalli; SV 36)

*Hibiscus rosa-sinensis* L., Mandara (Malvaceae).

During menses time, 2 to 3 flowers are taken daily by making them into paste along with rice gruel; 2-5 g of seasoned jaggery are then given. This is repeated for about 3 days to prevent conception for that month (Yanadi; Gudimallam, SV 16).

*Jasminum rigidum* Zenk., Pedda malle (Oleaceae).

Two to 3 flower buds are swallowed to prevent conception for a year (Irula; Kasipenthla, SV 125)

*Mitchella champaca* L., Chettu sampengi (Magnoliaceae).

Root is made into paste along with black pepper and a spoonful of the paste is given on the fifth day of menstrual cycle, for 3 days (Irula; Nagula Cheruvu; SV 165).

*Raphanus sativus* L., Mullangi (Brassicaceae).

Seed decoction is taken during menstrual period for about 5 days to prevent conception (Irula; Dornakambala; SV 170).

*Salvadora persica* L., Pedda gogu, Turaka gogu (Salvadoraceae).

Bark decoction (about 10 ml) is taken for 7 days after the fifth day of menses (Yanadi; Chittattur, SV 146).

*Terminalia bellirica* Roxb., Tandra (Combretaceae).

Fruit decoction is given 2 to 3 times a day, for about 7 days during menstrual period (Yanadi, Karakollu; SV 148)

Abortion

*Ailanthus excelsa* Roxb., Peddamanu (Simaroubaceae).

Bark is made into paste and given for 2 to 3 days on empty stomach to terminate 2 to 3 month old pregnancy (Madhiga; Kaspentla; SV 67).

*Amaranthus polygamus* L., Chiri koora (Amarantaceae).

One to 2 ounces of root juice are given 2 or 3 times a day to terminate 1 to 2 month old pregnancy (Ramanujam, native doctor; Korlagunta; SV 39).
Azadirachta indica A. Juss., Neem, Vepa (Meliaceae)
Using neem leaf juice, paste is made with the cotyledons of neem and flowers of Rhus communis L. and inserted into vagina (Irula, Nagula cheruvu, SV 37).

Bambusa arundinacea Willd., Bamboo, Veduru (Poaceae) and Dolichos biflorus L., Ulivalu (Fabaceae)
A decoction made from the seeds of Dolichos and leaves of bamboo is given for termination of pregnancy (Mid-wife, Tottipalli, SV 70).

Celestrus paniculata Willd., Jottismati, Teega palleru (Celastraceae)
Bark extract, when given on empty stomach, causes termination of 2-3 month old pregnancy (Irula, Nelluruwandla palli, SV 49).

Citrus coloecyntha Schrad., Verri-puccha (Cucurbitaceae)
Root is boiled in goat milk and made into paste. This is applied in the vagina or the root is inserted into the vagina for a day, to get abortion (Mid wife, Tottipalli; SV 48).

Cuttalara verrucosa L., Gilligicha (Fabaceae)
Half a spoon of seed powder is given for abortion (Yanadi, Yanadi colony, Tirumala; SV 34).

Ferula asafoetida L., Asafoetida, Inguva (Apiaceae)
Black mustard seeds are mixed with root resin of Asafoetida in equal proportions and made into powder. A tea spoonful of powder is swallowed along with rice gruel for abortion of 3 to 4 month old pregnancy (Yanadi, Gudimallam Yanadi colony; SV 89).

Gloriosa superba L., Nabhi, Liliaceae)
Root (1 cm long) is made into paste, mixed with half spoon of pepper powder and given along with milk. One dose is sufficient to abort up to 4 month old pregnancy (Irula; Nagula Cheruvu; SV 75).

Michelia champaca L., Chettu sampengi (Magnoliaceae)
Two to 3 ounces of juice are given 2 to 3 times as abortifacient for 2 to 3 month old pregnancy (Yanadi, Nelluruwandla palli, SV 46).

Dmbbago rosea L., Nalla Chitramulamu (Plumbaginaceae)
Root paste mixed with jaggery is given on empty stomach (Yeddula Gangu lumma, Tottipalli, SV 81).

Plumbago zeylanica L., Erra Chitramulamu (Plumbaginaceae)
Root paste mixed with turmeric is given on empty stomach. Root also causes abortion when introduced into vagina (Osuteri) (Yeddula Gangu lumma, Tottipalli; SV 82).

Ante-partum treatment (for easy delivery methods followed by the tribal midwives)

Achyranthes aspera L., Uttareni (Amarantaceae)
Root is placed inside the vagina to hasten labour pains. The paste of the root is also applied over the navel and pubic region (Madhiga, Nagula Cheruvu; SV 55).

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Adhatoda vasica Nees, Addasaramu (Acanthaceae)
Macerated root is applied on the pubic region and inside the vagina to help
dilation (Yanadi, Gudimallam, SV 64)

Aristolochia indica L., Nalla Eswari (Aristolochiaceae)
When labour is delayed, a mixture of the roots of long pepper and Aristolochia
is given with fried Asafoetida wrapped in betel leaves (S.V. Khaseem Shaheb,
native doctor; Yerravaripalem cross; SV 45)

Boerhaavea diffusa L., Atika mamidi (Nyctaginaceae)
Root paste mixed with castor oil is applied inside the vagina to facilitate labour
(G. Akkamma, Tuvva vandla palli; SV 35).

Citrullus colocynthis Schrad., Verripucha (Cucurbitaceae)
To facilitate dilation, paste made from the root with water and ghee is applied
below the navel and inside the vagina (Jenda Dhanamma, Chittattur
Ramalingaparam, SV 48)

Sapium emarginatus Vahl., Kunkudu (Sapindaceae)
Pessary made of the fruit or cotton dipped in saturated foam are introduced
into the vagina to stimulate the uterus (P. Jayamma; Nagula Cheruvu; SV 85)

Sphaeranthus indicus L., Bodatharamu (Asteraceae).
The plant powder is given along with rice gruel to aid labour (Suraiah; Yanadi
colony, Tirumala, SV 77)

Post-partum treatment

Azadirachta indica A Juss, Neem, Vepa (Meliaceae).
Leaf juice is given once or twice, 2 to 3 tea spoonfuls, for constriction of
womb and as prophylactic measure against infections (Chukkala pati Gundalu,
Gundla gutta palam; SV 37)

Caesalpinia crista L., Gaccha kaya (Caesalpiniaceae)
Paste of the root bark is given with rice gruel to facilitate lochia discharge
(Irula; Tottipalli; SV 27)

Dolichos byrılması Lour, Ulavalu (Fabaceae)
Seed decoction is given to promote lochia discharge (P. Ramaiah; Nagula
cheruvu, SV 95)

Ferula asafoetida L., Asafoetida, Inguva (Apiaceae).
A small quantity of fried root resin of Asafoetida mixed with garlic and ghee
is given for lochia discharge after child birth (Irula; Nelluru vandla palli; SV 89).

Sapium emarginatum Vah, Kunkudu (Sapindaceae)
Pessary made of shelled fruits mixed with roasted alum or cotton cloth dipped
in above juice are used to induce the uterus to return to its normal condition
after child birth (Yanadi, Gudimallam; SV 85).

DISCUSSION

The tribe people and villagers of the surveyed region discovered some
herbal drugs for birth control, ante- and post-partum treatments. The fruits, re-
sin, bark, roots and leaves of some plants were considered effective in birth control and as abortifacients. Seeds of Canavalia, bark of Aslanthus, resin of Phyllanthus, leaves of Trapa and Mimus, tubers of Costus and Pueraria, roots of Hedyotis, Phyllanthus and Cirsium were employed frequently in birth control and as abortifacients by the tribes and the villagers considering the herbal drugs as safe and easy to administer. Further, the people knew that these plants should be avoided to get and maintain pregnancy whenever desired.

Abrus, Pueraria, Ruem, Phyllanthus, Aristolochia, Hibiscus, have been referred in the literature for female contraception and these plants need special mention for further study. Significant anti-fertility activity was reported in Moringa root, Abrus seeds, Achyranthes aspera stems, Dolichos biflorus seeds, Butea monosperma seeds and Sapindus emarginatus seeds. Adhatoda vasica, Butea monosperma, Caesalpinia cristata have been found to possess abortifacient activity. Adhatoda, Hedyotis, Solanum, Canavalia, Mimosa, Trapa, Costus, Citrullus, Musa, Bambusa and Cissus have not been studied so far for the fertility control. There are strong folklore claims about these plants, which should be confirmed by experimental studies.

The use of Achyranthes, Adhatoda, Aristolochia and Citrullus for easy delivery and ante-partum care is also interesting and needs further research. For post-partum care, especially as prophylactic and for lochia discharge, the tribes developed herbal therapies. The use of Azadirachta for the construction of womb after delivery is a new therapy employed by the Vanadus of this region. The use of Caesalpinia and Dolichos for post-partum treatment deserves extensive research.

Acknowledgements. The authors wish to express their thanks to the rural and tribal people of Chittoor District who wholeheartedly cooperated in sharing their knowledge and in the collection of the plant material for this study. The authors are grateful to the International Development Research Centre, Ottawa, Canada, for rendering assistance to this Herbal folkloric work, Department of Botany, Sri Venkateswara Arts College, Tirupati, Andhra Pradesh, India.

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TRIBAL MEDICINAL PLANTS OF CHITTOOR

S. VEDAVATHY, A. SUDHAKAR and V. MRDULA

Department of Botany, Sri Venkateswara Arts College, Tirupati - 517 502, Andhra Pradesh

ABSTRACT

Medicinal plants used in Tribal medicine from Chittoor district have been surveyed and documented systematically. The paper deals with 202 medicinal plants, indexed along with important tribal applications for the cure of various ailments.

INTRODUCTION

Chittoor district is the eighth largest district in the state of Andhra Pradesh, India having 1,30,000 Tribal population. The district area lies between 12° 37' to 14° 8' of North latitude and 78° 33' to 79° 55' of the Eastern longitude and with a geographical area of 15,512 Sq.kms with a forest area of 4513.440 Sq.Kms. The district is divided into two divisions viz. East and West divisions. The eastern ghats are predominant in the west region. The general elevation of the mountainous part of the district is 2,500 feet above sea level. The climate is tropical and receives rainfall from both monsoons. The average rainfall is about 320 mm, which is mostly from north east monsoon.

The area is inhabited by large number of tribes like Yanadis, Nakalas, Irulas, Yerukalas, Sugalis or Lambadis and Chenchus. By enumeration studies it is known that this region is a rich source of medicinal plants. Ethnobotanically this region remain under explored and no comprehensive account especially on the folklore survey is available. The attitude of the tribals towards disease treatment include both physical and psychological. Physical treatment includes herbal therapies for the symptoms. Psychological treatment is mostly by Magico-religious practices.

Tribal medicine is considered as mother of indigenous systems of medicine. It is of utmost importance to explore the medicinal flora of this district to procure authentic drugs for research purpose as well as for pharmaceutical industry. The notable contributions of ethnobotanical interest in Andhra Pradesh are Jain et. al., (1973), Hemadri et. al., (1987, 87a. 87b) Prakasa Rao, K and Hara Srimululu S, (1985), Seshagiri Rao & Hemadri (1984), Venkanna, (1990).
The Present paper deals with the commonly used medicinal plants of Chittoor district used in tribal medicine. This work may point to the possibility of drug development and scope for further detailed chemical and biological screening on herbal drugs under multidisciplinary approach for development of new chemotheurapeutic agents, for various ailments.

Materials and Methods:

The information on the tribal medicine practices and the medicinal plants used were collected through in-depth interviews and informal discussions with people having high degree of herbal knowledge. The work was undertaken during the years 1994-1996. One hundred tribal villages in and around east and west divisions of Chittoor district was surveyed. As the survey is mostly based on personal contact, the survey party has spent about one and half years conducting field investigation through observation and group discussions. The plants are enumerated in alphabetical order according to their botanical name and Voucher herbarium specimen number(s) are noted against each species, followed by their family, local names, part used and their medicinal use along with the name of the tribe.
**Medicinal Plants Of Chittoor District And Their Medicinal Importance**

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Botanical Name/ Family/Field No</th>
<th>Local Name</th>
<th>Tribe Used</th>
<th>Parts</th>
<th>Traditional Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Abrus precatorius L. (Fabaceae) SV (105).</td>
<td>Guravinda</td>
<td>Y</td>
<td>Se</td>
<td>Contraceptive Gonorrhoea, Leucoderma, Hairtonic</td>
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<td>2.</td>
<td>Abutilon indicum (L.) St.Tutpurabenda (Malvaceae) SV (57)</td>
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<td></td>
<td></td>
<td></td>
<td>R</td>
<td>Nightblindness</td>
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<tr>
<td>3.</td>
<td>Acacia Sinuata (Lour.)Mr (Mimosaceae) SV (72)</td>
<td>Sikaya</td>
<td>L</td>
<td>Fr</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td>Bone-fracture</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td>dogbite, Post-partum treatment, Leprosy, Leucoderma, Stomachache, Toothache</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Se</td>
<td>Urinary troubles</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>No.</th>
<th>Plant Name</th>
<th>Common Name</th>
<th>Medicinal Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Adhatoda Vasica Nees (Acanthaceae) SV (64)</td>
<td>Addasarpaku</td>
<td>Asthma with Cough, Cough, Cold &amp; Asthma, Antepartum treatment, Menorrhagia, Psoriasis.</td>
</tr>
<tr>
<td>7.</td>
<td>Aegle marmelos (L.) (Rutaceae) SV (310)</td>
<td>Marudu</td>
<td>Jaundice, Leprosy, Leucoderma, Ophthalmia Hiccups, Joint pains, piles Dyentery, High blood pressure</td>
</tr>
<tr>
<td>8.</td>
<td>Aerva lanata (L.) Juss (Amaranthaceae SV (2))</td>
<td>Kondapindi/ Y &amp; N Pindipoolu</td>
<td>Leucorrhoea Nephrocalcinosis and Ureteral Stones</td>
</tr>
<tr>
<td>9.</td>
<td>Agave cantula Roxb. (Agavaceae) SV (315),</td>
<td>Kittanara</td>
<td>Sexual diseases, Bruises</td>
</tr>
<tr>
<td>10.</td>
<td>Ailanthus excelsa Roxb (Simaroubaceae SV (67))</td>
<td>peddamanu</td>
<td>Contraceptive Post-partum treatment.</td>
</tr>
<tr>
<td>11.</td>
<td>Alangium salvifolium (L.f) Warg. (Alangiaceae) SV (93)</td>
<td>Ooduga</td>
<td>Dogbite, Fissures in the feet, inflammations and swellings Fr Conjunctivitis Sb Fevers, Snake bite</td>
</tr>
<tr>
<td>12.</td>
<td>Albizzia lebbeck (L.)Wd (Mimosaceae) SV (92)</td>
<td>Baagicheettu</td>
<td>Asthma with cough Nightblindness</td>
</tr>
<tr>
<td>No.</td>
<td>Plant Name</td>
<td>Part(s)</td>
<td>Treatment(s)</td>
</tr>
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</tr>
<tr>
<td>14</td>
<td>Allium sativum L. (Liliaceae) SV (312)</td>
<td>I</td>
<td>Bulb Cuts and Wounds, Earache, epilepsy, Ante-partum treatment, Headache, Joint pains, Nightblindness</td>
</tr>
<tr>
<td>15</td>
<td>Aloe vera (L.) Burm. (Liliaceae) SV (320)</td>
<td>Ye</td>
<td>L Musambaramu Ye Chinnakalabanda Black patches, burns, Joint pains.</td>
</tr>
<tr>
<td>16</td>
<td>Alstonia scholaris RBr. (Apocynaceae) SV (335)</td>
<td>Y</td>
<td>Sb Edakula pala Fever with Chills</td>
</tr>
<tr>
<td>17</td>
<td>Alysicarpus monilifer (L) DC. (Fabaceae) SV (330)</td>
<td>N</td>
<td>L - Jaundice</td>
</tr>
<tr>
<td>18</td>
<td>Amaranthus roxburghianus Nevisk. (Amaranthaceae) SV (39)</td>
<td>Ye</td>
<td>R Chirikoora Abortion</td>
</tr>
<tr>
<td>19</td>
<td>Amaranthus spinosus L. (Amaranthaceae) SV (369)</td>
<td>N</td>
<td>L Mullotakura Laxative, Toothache</td>
</tr>
<tr>
<td>20</td>
<td>Ammania baccifera L. (Lythraceae) SV (297)</td>
<td>Y</td>
<td>L Agivendra Cancerous ulcers</td>
</tr>
<tr>
<td>21</td>
<td>Andrographis paniculata (Bf.) Wlex. NS. (Acanthaceae) SV (91)</td>
<td>Ye</td>
<td>WP nelavenu Cough, Cold, and Asthma, Fever, Jaundice, Stomach ulcers</td>
</tr>
<tr>
<td>22</td>
<td>Anisochilus Carnosus (l.f) Wellich (Lamiaceae) SV (380)</td>
<td>I</td>
<td>L Adusupundlaku Fissures and cracks in the feet</td>
</tr>
<tr>
<td>23</td>
<td>Anisomeles malabarica (L.) R.Br. (Lamiaceae) SV (50)</td>
<td>Y</td>
<td>L WP Magabeera Fevers Rheumatic pains</td>
</tr>
<tr>
<td>24</td>
<td>Annona squamosa L. (Annonaceae) SV (170)</td>
<td>Y</td>
<td>L Seethapalamu Toothache</td>
</tr>
</tbody>
</table>

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<p>|     |     |     | I | Lx | Rat bite, White patches in the eyes. |
|     |     |     |     | WP | Psoriasis. |
| 27. | Aristolochia bracteolata Lam. (Aristolochiaceae) SV (373) | Gadidhagodapaku | N | S | leucorrhoea |
|     |     |     |     | L | Anthelmintic, Cuts and Wounds, Nighthblindness, Psoriasis |
| 28. | Aristolochia indica L. (Aristolochiaceae) SV (45) | Nallaeswari | Y | WP | Eczema |
|     |     |     | I | L | Leucoderma |
|     |     |     |     | R | Fevers, Snake bite |
| 29. | Asparagus racemosus Willd (Lilaceae) SV (357) | Pilliteegalu | Su | Rt | Galctogogue, Leucorrhoea, Nephrocalcinosis &amp; Ureteral stones, Stomach ulcers, to get back virility or vigour. |
| 30. | Azadirachta indica A.Juss. (Meliaceae) SV (37) | Vepachetty | Y | Cot | Abortion |
|     |     |     | I | L | Allergies, Contraceptive |
|     |     |     |     |     | earache, eye diseases, Fevers, Piles, Post-partum treatment |
|     |     |     |     |     | Jaundice |
|     |     |     |     |     | FL |
|     |     |     |     |     | Sb |
|     |     |     |     |     | Gum |
|     |     |     |     |     | Nephroprotective |
|     |     |     |     |     | Se |
|     |     |     |     |     | Rat bite. |
| 31. | Bacopa monnieri (L.) Pn (Scrophulariaceae) SV (267) | Neen | Y | WP | Brain tonic, Nervous debility |
|     |     | Sambrani/Brahmi |     |     |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Plant Name</th>
<th>Part Used</th>
<th>Action</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.</td>
<td>Bambusa arundinacea (Rz.) Roxb. 9Poaceae</td>
<td>Veduru</td>
<td>N</td>
<td>L abortion, antihelminthic Sterilization</td>
</tr>
<tr>
<td>33.</td>
<td>Barleria prionitis (Acanthaceae) SV (66)</td>
<td>Mulla</td>
<td>Y</td>
<td>L Asthma with cough, Skin diseases</td>
</tr>
<tr>
<td>34.</td>
<td>Bauhinia racemosa Lam. (Caesalpiniaceae) SV (174).</td>
<td>Aanchetty</td>
<td>I</td>
<td>Sb Throat pain</td>
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<td>35.</td>
<td>Boerhavia diffusa L. (Nyctaginaceae) SV (35)</td>
<td>Atikimamidi</td>
<td>I</td>
<td>WP Fevers</td>
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<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>L Leprosy (early stages only) Cuts &amp; Wounds.</td>
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<td>36.</td>
<td>Bombax ceiba L. (Bombacaceae) SV (396)</td>
<td>Buruga</td>
<td>I</td>
<td>L Strangury Contraceptive, Piles</td>
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<td></td>
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<td>Fl</td>
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<td>37.</td>
<td>Boswellia ovalifoliolata Bl &amp; Hry (Burseraceae) SV (387)</td>
<td>Konda sambrani</td>
<td>I</td>
<td>Sb Inflammation &amp; Swellings, Stomach ulcers Hydrocoel</td>
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<td></td>
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<td>Resin</td>
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<td>38.</td>
<td>Bougainvillea Spectabilis Wd. (Nyctaginaceae)</td>
<td>Kagithampoolu</td>
<td>Y</td>
<td>L Diabetes</td>
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<td>39.</td>
<td>Brassica nigra L. (Brassicaceae) SV (363)</td>
<td>Aavalu</td>
<td>Y</td>
<td>Se Diarrhoea, Contraceptive</td>
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<td>40.</td>
<td>Butea monosperma (Lam.) Taub. (Fabaceae) SV (105)</td>
<td>Modhuga</td>
<td>y</td>
<td>Se Abortion, Contraceptive Leucoderma, Fertility</td>
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<td></td>
<td></td>
<td>I L FL Nephrocalcinosis &amp; Ureteral stones</td>
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<td>41.</td>
<td>Caesapinia cristula L. (Caesalpiniaceae) SV (27)</td>
<td>Gaccha</td>
<td>Su</td>
<td>L Deafness</td>
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<td></td>
<td>Y</td>
<td>Ct Epilepsy, Rat bite, Stomach-ache</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Rb Post-partum treat -ment</td>
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42. **Calophyllum inophillium L.** (Clusiaceae) SV (382).

43. **Calotropis gigantea (L.) R.Br** (Asclepiadaceae) SV (388)

44. **Canavalia ensiformis** DC. (Fabaceae) SV (94)

45. **Capparis zeylanica L.** (capparidaceae) SV (367)

46. **Caralluma umbellata** Haw. (Asclepiadaceae) SV (374) Kommulu

47. **Cardiospermum halicacabum** L. (Sapindaceae) SV (104)

48. **Carica papaya L.** (Caricaceae) SV (356)

49. **Carissa Carandas L.** (Apocynaceae) SV (247)

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<th>Common Name</th>
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<th>Use</th>
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<td>42</td>
<td>Ponna</td>
<td><em>Calophyllum inophillium</em></td>
<td>Y</td>
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<td>Leprosy, Toothache</td>
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<td>43</td>
<td>Tella gilledu</td>
<td><em>Calotropis gigantea</em></td>
<td>Y</td>
<td>R</td>
<td>Abortion, Constipation due to indigestion, earache, inflammations and swellings, Joint pains, pneumonia, Conjunctivitis, epilepsy, Leucoderma, Toothache, Menstrual pains, Scorpion sting</td>
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<tr>
<td>44</td>
<td>Thamma</td>
<td><em>Canavalia ensiformis</em></td>
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<td>Fertility, Asthma with cough, Ante-partum treatment, Filariasis</td>
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<td>45</td>
<td>Adonda</td>
<td><em>Capparis zeylanica</em></td>
<td>Y</td>
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<td>46</td>
<td>Kundeti</td>
<td><em>Caralluma umbellata</em></td>
<td>Y</td>
<td>S</td>
<td>Stomach disorders, Abdominal Pains</td>
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<td>47</td>
<td>Buddakakara</td>
<td><em>Cardiospermum halicacabum</em></td>
<td>I</td>
<td>L</td>
<td>Tumours &amp; Swellings, Earache, Rheumatism</td>
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<td>48</td>
<td>Boppayi</td>
<td><em>Carica papaya</em></td>
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<td>L</td>
<td>Abortion, Inflammations</td>
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<td>49</td>
<td>Kalimi</td>
<td><em>Carissa Carandas</em></td>
<td>Y</td>
<td>L</td>
<td>Intermittent fevers, toothache</td>
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<tr>
<td>No.</td>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Family</td>
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<td>50.</td>
<td>Cassia auriculata L</td>
<td>Tangedu</td>
<td>I</td>
<td>L</td>
<td>Bone fracture, Inflammations, Diarrhoea, Fertility, Fever, Migraine, Nightblindness, Scorpion sting, Ulcers &amp; fissures in the mouth</td>
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<td>51.</td>
<td>Cassia fistula L</td>
<td>Relachettu</td>
<td>I</td>
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<td>Leucorrhoea, Stomach-ache</td>
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<td>(Caesalpiniaceae)</td>
<td></td>
<td>Y</td>
<td>L</td>
<td>Earache, nephroprotector</td>
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<td>Cassia occidentalis L</td>
<td>Kasintha</td>
<td>Y</td>
<td>L</td>
<td>Leprosy, Skin diseases, Scorpiion sting, Constipation due to indigestion</td>
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<td>Ye</td>
<td>Rb</td>
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<td>SV (25)</td>
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<td>53.</td>
<td>Catunaragam spinosa (Thumb.) tirven.</td>
<td>Manga</td>
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<td>Abortion, Fever</td>
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<td>(Rubiaeae) SV (362)</td>
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<td>Catharanthus roseus (L.) G.Dnp.</td>
<td>Billganneru</td>
<td>Y</td>
<td>Lt</td>
<td>Leucoderma, Menorrhagia, Allergic skin disease :</td>
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<td>(Apocynaceae) SV 959</td>
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<td>Celastrus paniculatus Wd.</td>
<td>Jyotismati</td>
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<td>Abortion, Beri-beri</td>
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<td>(Celastraceae) SV (49)</td>
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<td>56.</td>
<td>Centella asiatica (L.) Ub in Mt.</td>
<td>Sarswathiaku</td>
<td>Y</td>
<td>WP</td>
<td>Brain tonic, leprosy, Clear voice, Constipation due to indigestion, Jaundice.</td>
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<td>(Apiaceaeae) SV (69)</td>
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<td>Chloroxylon swietenia DC.</td>
<td>Billu</td>
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<td>L</td>
<td>Headache, Inflammation, Mosquito repellent.</td>
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<td>(Flindersiaceae) SV 9147</td>
<td>Chetty</td>
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<td>(Menispermacae) SV (205)</td>
<td>bankateega</td>
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<td>59.</td>
<td>Cissus quadrangularis L.</td>
<td>Nalleru</td>
<td>Y WP S</td>
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<td>(Vitaceae) SV (77)</td>
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<td>Dog bite, insect bite</td>
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<td>Citrullus colocynthis (L.) Schr.</td>
<td>Verripuccha</td>
<td>N R Fr WP</td>
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<td>Leprory (early stages)</td>
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<td>61.</td>
<td>Cleome gynandra L.</td>
<td>Vominta</td>
<td>Y L</td>
<td>Anthelmintic, Earache High blood</td>
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<td>(Capparidaceae) SV (358)</td>
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<td>62.</td>
<td>Cleome viscosa L.</td>
<td>Kukka Vominta</td>
<td>Y L</td>
<td>Cuts &amp; Wounds deafness. Earache,</td>
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<td>(Capparidaceae) SV (365)</td>
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<td>Headache, Tooth ache</td>
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<td>63.</td>
<td>Clerodendrum phlomidis L.f.</td>
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<td>Gonorrhoea</td>
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<td>Clerodendrum serrati, (L.) Moon</td>
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<td>Clitoria ternatea L.</td>
<td>Sankupushpam</td>
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<td>(Fabaceae) SV (83)</td>
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<td>Constipation</td>
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<td>Coccinia grandis (L.) Vt.</td>
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<td>Conjunctivitis, Galactogogue,</td>
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<td>Fertility</td>
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<td>67.</td>
<td>Cocculus hirsutus (L.) Diels.</td>
<td>Disaroteega</td>
<td>I L Su WP</td>
<td>Corns, Diabetes, Leucorrhoea,</td>
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<td>(Menispermacae) SV (15)</td>
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<td>Cochlospermum religiosum (L.) Alston</td>
<td>Kondagugu Y</td>
<td>L Gum</td>
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<td>Coleus amboinicus Lour. 9Lamiaceae</td>
<td>Vammakko I</td>
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<td>Nephrocalcinosis Uretoral stones</td>
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<td>Commiphora caudata (Wt &amp; Arn.) Engl. 1Burseraceae</td>
<td>Nettamamidi Ye</td>
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<td>Magic or religious practices.</td>
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<td>71.</td>
<td>Corallocarpus epigaeus (Rott.) C.B Clarke (Cucurbitaceae)</td>
<td>Akashagaruda N</td>
<td>R</td>
<td>Rheumatism, Venerial complaint</td>
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<td>Coriandrum sativum L. (Apiaceae)</td>
<td>Kotimiri Y</td>
<td>WP</td>
<td>Indigestion, Piles, throat pain</td>
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<td>73.</td>
<td>Costus speciosus (Koen.)J. (Costaceae)</td>
<td>Kevukinna Y</td>
<td>Rh</td>
<td>Sterilization</td>
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<td>Crotalaria verrucosa L. (Fabaceae)</td>
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<td>Curculigo or chioides Gaertn. (Amaryllidaceae)</td>
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<td>Curcuma longa L. (Zingeberaceae)</td>
<td>pasupu Y</td>
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<td>Cuscuta reflexa Roxb. (Cuscutaceae)</td>
<td>Savarapukada I</td>
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<td>Broken bones, Gastric troubles, cut &amp; wounds.</td>
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<td>Cyperus rotundus L. (Cyperaceae)</td>
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<td>Dalbergia latifolia Roxb (Fabaceae)</td>
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<td><em>Datura fastuosa</em> L. (Solanaceae)</td>
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<td>Hair loss due to lice infection</td>
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<td>Asthma</td>
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<td>81</td>
<td><em>Decalepis hamiltonii</em> Wt &amp; Arn.</td>
<td>Maredu-kommulu</td>
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<td>Constipation</td>
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<td>(Asclepiadaceae) SV (180)</td>
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<td><em>Delonix elata</em> (L.) Gamb.</td>
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<td>Inflammations &amp; Swellings, Laxative</td>
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<td>(Caesalpiniaceae) SV (364)</td>
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<td><em>Delonix regia</em> (Hook) Raf.</td>
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<td>Dysmenorrhoea</td>
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<td>(Caesalpiniaceae) SV (364)</td>
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<td><em>Dichrostachys cinerea</em> (L.) Wight &amp; Arn. (Mimosaceae) SV (313)</td>
<td>Veluturuchettu</td>
<td>N</td>
<td>Ureteral stones, Paralysis, stones in the kidney, virility for men</td>
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<td>Joint pains</td>
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<td><em>Diplocyclos palmatus</em> (Cucurbitaceae) SV (6)</td>
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<td>Scorpon sting</td>
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<td><em>Dodonaea viscosa</em> (L.) Jacq</td>
<td>Banderu</td>
<td>I</td>
<td>Broken bones</td>
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<td>(Sapindaceae) SV (288)</td>
<td></td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>87</td>
<td><em>Dolichos biflorus</em> Lour. (Fabaceae) SV (95)</td>
<td>Ulavalu</td>
<td>N</td>
<td>Post-partum treatment</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Se</td>
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<tr>
<td>88</td>
<td><em>Eclipta prostrata</em> (L) Mout.</td>
<td>Guntegalijeru</td>
<td>Y</td>
<td>Cough, Cold &amp; Asthma, cuts &amp; wounds, Dandruff, Eczema, Epilepsy,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Asteraceae) SV (365)</td>
<td></td>
<td>L</td>
<td>Seasonal allergies, Hair tonic, Headache, Migraine</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Cataract</td>
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<tr>
<td>89</td>
<td><em>Enicostemma axillare</em> (Lam) Royal. (Gentianaceae) SV (68)</td>
<td>Nelagurugudu</td>
<td>N</td>
<td>Diabetes, Fevers</td>
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<td></td>
<td></td>
<td></td>
<td>WP</td>
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318
90. **Enteda rheedi** Spgl. (Mimosaceae) **SV (319)**  
   Gilateega  
   N  L  Rat bite  
   C  Se  Rheumatic pains & Swellings.

91. **Erythrina variegata L.** (Fabaceae) **SV (351)**  
   badisa  
   Y  L  Joint pains,  
   L  Whooping Couch

92. **Euphorbia hirta L.** (Euphorbiaceae) **SV (308)**  
   Pacchaku  
   Y  WP  Boils  
   N  Lt  Warts  
   L  ulcers & fissures in the mouth

93. **Euphorbia tirucalli L.** (Euphorbiaceae) **SV (317)**  
   Pullakada  
   N  S  Cough & Cold

94. **Evolvulus alsinoides L.** (Convolvulaceae) **SV (14)**  
   Vishukantha  
   I  WP  Cough & cold,  
   R  Hiccups Fevers,  
   Jaundice

95. **Ficus benghalensis L.** (Moraceae) **SV (311)**  
   Marri  
   Y  L  Cuts & Wounds  
   L  Menorrhagia

96. **Ficus hispida L.f.** (Moraceae) **SV (205)**  
   Bemmedi  
   Y  Rb  Cuts & Wounds  
   N  L  Leucoderma  
   C  Sb  Nephroprotector

97. **Ficus racemosa L.** (Moraceae) **SV (320)**  
   Atti  
   I  Sb  Diabetes, Fertility  
   Fl  Diarrhoea

98. **Ficus religiosa L.** (Moraceae) **SV (309)**  
   Ravi  
   y  Sb  Black patches on the face, for drug addicts  
   C  L  Cardiac tonic

99. **Gloriosa superba L.** **SV (75)**  
   Nabhi/  
   Y  R  Abortion, (Liliaceae)  
   Deyyapaku  Gonorrhoea,  
   R  Rheumatism

100. **Gmelina arborea Roxb** (Verbenaceae) **SV (135)**  
    Errinaruva  
    Y  L  Lice eradication  
    Su  R  Gichtogogue  
    L  Scorpion sting

101. **Gmelina asiatica L** (verbenaceae) **SV (314)**  
    Adavigummadi  
    Y  Fr  Dandruff, Hair tonic  
    Fr  Inflammations & Swellings
<table>
<thead>
<tr>
<th></th>
<th>Plant Name</th>
<th>Common Name</th>
<th>Family</th>
<th>Action(s)</th>
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<tr>
<td>102.</td>
<td>Gymnema Sylvestre (Retz.) R. Br. exSch. (Asclepiadaceae)</td>
<td>Gymnema</td>
<td>I L</td>
<td>Diabetes, Eye diseases</td>
</tr>
<tr>
<td>103.</td>
<td>Hedyotis puberula (G.Don) Arn. (Rubiaceae)</td>
<td>Hedyotis</td>
<td>Y R</td>
<td>Contraceptive</td>
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<tr>
<td>104.</td>
<td>Helicteres isora L. (Sterculiaceae)</td>
<td>Helicteres</td>
<td>Y Rb F</td>
<td>Diabetes, Diarrhoea &amp; Dysentery</td>
</tr>
<tr>
<td>105.</td>
<td>Hemidesmus indicus (L.) R. Br. (Asclepiadaceae)</td>
<td>Hemidesmus</td>
<td>I R</td>
<td>Fissures in the feet, Toothache, Tonic</td>
</tr>
<tr>
<td>106.</td>
<td>Hibiscus rosa-sinensis L. (Malvaceae)</td>
<td>Hibiscus</td>
<td>Y &amp; I Fl L</td>
<td>Hair tonic, jaundice, Alopecia</td>
</tr>
<tr>
<td>107.</td>
<td>Holorrhena pubscens (Buch. Ham.) Wdl ex. Don. (Apocynaceae)</td>
<td>Holorrhena</td>
<td>Y L Sb</td>
<td>Joint pains, piles, Dysentery</td>
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<tr>
<td>108.</td>
<td>Holoptelia integrifolia (Roxb.) Plh. (Ulmaceae)</td>
<td>Holoptelia</td>
<td>N Sb</td>
<td>Dysemorrhoea</td>
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<tr>
<td>109.</td>
<td>Hybanthus enneaspermus (L.) F. Muell. (Violaceae)</td>
<td>Hybanthus</td>
<td>N WP</td>
<td>Aphrodisiac, Tonic</td>
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<td>110.</td>
<td>Ichnocarpus frutescens (L.) R. (Apocynaceae)</td>
<td>Ichnocarpus</td>
<td>N R</td>
<td>Dysentery</td>
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<tr>
<td>111.</td>
<td>Indigofera mysoresensis Rohl. ex DC. (Fabaceae)</td>
<td>Indigofera</td>
<td>N L</td>
<td>Leucoderma</td>
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<tr>
<td>112.</td>
<td>Jasminum angustifolium Adavimalle (Oleaceae)</td>
<td>Jasminum</td>
<td>Y F R</td>
<td>Contraceptive, Ring worm</td>
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</tbody>
</table>
113. **Jatropha curcas** L. (Euphorbiaceae)  peddanepalamu I  Lt  Blisters, Earache

114. **Justicia tranquubariensis** L.f. (Acanthaceae)  Redamandalamu I  L  Wounds and cancerous ulcers

115. **Kalanchoe pinnata** (L.) pers (Crassulaceae)  Ranapala I  L  Wounds, boils, insect bites

116. **Lawsonia inermis** L. (Lythraceae)  Gorintaku Y  L  Headache, Gonorrhoea, Conjunctivitis, Debility, Hair tonic, Leucoderma, Spermatorrhoea, Syphilis

117. **Leonotis nepatiiifolia** (L.) R.Br. (Lamiaceae)  Renabheri Y  Fl  Burns

118. **Leptadenia reticulata** (Retz.) Wt & Arn (Asclepiadaceae)  Mukkutummudu Y  L  Cold, Earache, Galactogogue

119. **Leucas aspera** (Willd.) Link (Lamiaceae)  Tummi I  L  Cold & Cough, Ring worms

120. **Limonia acidissima** L. (Rutaceae)  Velegachettu Ye  Sb  Syphilis

121. **Madhuca indica** Gmel. (Sapotaceae)  Ippa Y  Sb  Skin Diseases

122. **Mallotus philippensis** (Lam.) Muell (Euphorbiaceae)  Kunkumachetty Y  Young shoots  Jaundice
<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Usage</th>
<th>Action</th>
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<tr>
<td>123</td>
<td><em>Mangifera indica</em> L. (Anacardiaceae)</td>
<td>Mamidi</td>
<td>Y</td>
<td>Sb</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Contraceptive, Menorrhagia,</td>
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<td></td>
<td>Syphilis, Gonorrhoea</td>
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<tr>
<td></td>
<td></td>
<td>I</td>
<td>Resin</td>
<td>Black patches on the face, scorpion sting</td>
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<tr>
<td></td>
<td></td>
<td>Su</td>
<td>Ct</td>
<td>Headache due to stress, Leucorrhoea.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I</td>
<td>L</td>
<td>Hiccups, Jaundice.</td>
</tr>
<tr>
<td>124</td>
<td><em>Melia azedarach</em> L. (Meliaceae)</td>
<td>Turakavepa</td>
<td>I</td>
<td>L</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anthelmintic.</td>
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<tr>
<td>125</td>
<td><em>Mentha spicata</em> L. (Lamiaceae) SV (333)</td>
<td>Pudina</td>
<td>Y</td>
<td>L</td>
</tr>
<tr>
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<td></td>
<td>Contraceptive, indigestion</td>
</tr>
<tr>
<td>126</td>
<td><em>Merremia tridentata</em> (L.) Hall.f. (Convolvulaceae) SV (331)</td>
<td>Sethuamma Jada</td>
<td>Y</td>
<td>Fr</td>
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<td></td>
<td>Epilepsy.</td>
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<tr>
<td>127</td>
<td><em>Michelia champaca</em> L. (Magnoliaceae)</td>
<td>Manusampanji</td>
<td>I</td>
<td>R</td>
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<td></td>
<td>Abortion, Contraceptive</td>
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<tr>
<td>128</td>
<td><em>Mimosa pudica</em> L. (Mimosaceae) SV (44)</td>
<td>Attipatti/</td>
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<td>L</td>
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<td>Muduthadamara ye</td>
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<td>Diabetes, Filariasis, Whooping Cough</td>
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<td>129</td>
<td><em>Mirabilis Jalapa</em> L. (Nyctaginaceae)</td>
<td>Chandrakantha</td>
<td>I</td>
<td>R</td>
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<td>tumours</td>
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<td>Urticaria</td>
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<td>130</td>
<td><em>Momordica Charantia</em> L. (Cucurbitaceae) SV (323)</td>
<td>Kakara</td>
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<td>Fr</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Diabetes, Fever, Leucorrhoea, Diarrhoea, High blood pressure</td>
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<tr>
<td>131</td>
<td><em>Moringa oleifera</em> Lam. (Moringaceae) SV (7)</td>
<td>Munaga</td>
<td>I</td>
<td>Rb</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ye</td>
<td>Sb</td>
<td>Cough</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L</td>
<td>Sterilization, Boils, dysemorrhoea</td>
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<td>Eye diseases (burning sensation), Joint pains, pain &amp; inflammation to eye</td>
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<tr>
<td>No.</td>
<td>Plant Name and Family</td>
<td>Yr</td>
<td>Lc</td>
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<td>132</td>
<td>Mucuna pruriens (L.) DC. <em>Dulagondi</em> (Fabaceae)</td>
<td>Y</td>
<td>R</td>
<td>nervine tonic, paralysis Scorpion sting.</td>
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<tr>
<td></td>
<td></td>
<td>Ye</td>
<td>L</td>
<td>Belching, Hair tonic Stomach-ache</td>
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<tr>
<td>134</td>
<td>Musa paradisiaca L. <em>Aratichettu</em> (Musaceae) SV (100)</td>
<td>Y</td>
<td>S</td>
<td>Cuts &amp; Wounds Leucoderma</td>
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<tr>
<td></td>
<td></td>
<td>Ye</td>
<td>R</td>
<td>Lice eradication</td>
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<td></td>
<td></td>
<td>I</td>
<td>Fr</td>
<td>Earache Dysentery</td>
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<tr>
<td>135</td>
<td>Nerium oleander L. <em>Ganneru</em> (Apocynaceae)</td>
<td>I</td>
<td>L</td>
<td>Black patches contraceptive, cough, cold &amp; asthma, Dari druff, earache, eczema, fertility, foul breath, sterilization Scorpion sting</td>
</tr>
<tr>
<td>136</td>
<td>Nyctanthes arbour-tristis L. <em>Parijathamu</em> (Oleaceae)</td>
<td>Y</td>
<td>Se</td>
<td>Laxative</td>
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<tr>
<td>137</td>
<td>Ocimum basilicum L. <em>Kamma-gaggiraku</em> (Lamiaceae) SV (350)</td>
<td>I</td>
<td>L</td>
<td>Contraceptive</td>
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<tr>
<td>138</td>
<td>Ocimum tenuiflorum L. <em>Manchitulasi</em> (Lamiaceae) SV (131)</td>
<td>I</td>
<td>L</td>
<td>Contraceptive</td>
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<tr>
<td>139</td>
<td>Operculina turpethum Silva Manso <em>Tegada</em> (Convolvulaceae) SV (346)</td>
<td>I</td>
<td>R</td>
<td>Contraceptive</td>
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<tr>
<td>140</td>
<td>Opuntia dillenii (Ker-Gawl.) Haw. <em>Bonthajamudu</em> (Cactaceae) SV (338)</td>
<td>WP</td>
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<td></td>
<td></td>
<td></td>
<td>Flatulence, Wounds &amp; Fractures.</td>
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<tr>
<td>142.</td>
<td>Oxallas corinicate L.</td>
<td><em>Oxallas corinicate</em> (Oxalidaceae)</td>
<td>Dysentery &amp; Prolapse of the rectum</td>
<td>Y</td>
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<td>143.</td>
<td>Passiflora foetida L.</td>
<td><em>Passiflora foetida</em> (Passifloraceae)</td>
<td>Asthma, Headache</td>
<td>I</td>
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<tr>
<td>144.</td>
<td>Pedalium murex L.</td>
<td><em>Pedalium murex</em> (Pedaliaceae)</td>
<td>Dysmenorrhoea, Menorrhagia, Virility, Hydrocoel, Fertility, Snake bite, Nephro Protectors, Gonorrhoea, Joint pains</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Su Fr Ye WP C Se</td>
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<td>145.</td>
<td>Pergularia daemia (Forsk.) Chrov.</td>
<td><em>Pergularia daemia</em> (Asclepiadaceae)</td>
<td>Eczema, Galactogogue, Inflammation &amp; Swellings</td>
<td>Y</td>
</tr>
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<td>Eczeema</td>
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<td>146.</td>
<td>Phyla nodiflora (L.) Green</td>
<td><em>Phyla nodiflora</em> (Verbenaceae)</td>
<td>Fevers, Ureteral Stones</td>
<td>Y</td>
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<td>147.</td>
<td>Phyllanthus amarus Schum &amp; Thonn.</td>
<td><em>Phyllanthus amarus</em> (Euphorbiaceae)</td>
<td>Anaemia, Constipation, due to indigestion, Dysmorrhoea, Fertility, Jaundice, Migraine</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Anaemia, Constipation due to indigestion, Dysmorrhoea. Fertility, Jaundice. Migraine</td>
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<td>148.</td>
<td>Phyllanthus emblica L.</td>
<td><em>Phyllanthus emblica</em> (Euphorbiaceae)</td>
<td>Bleeding nose, Cough, &amp; asthma, Dabdryfim diabetes. For black hair, uncers &amp; Fissures in the mouth. Headache due to stress</td>
<td>I</td>
</tr>
<tr>
<td></td>
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<td>Bleeding nose, Cough, &amp; asthma, Dabdryfim diabetes. For black hair, uncers &amp; Fissures in the mouth. Headache due to stress</td>
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<td></td>
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<td>Stomach ulcers.</td>
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<td>Genus and Species</td>
<td>Part Used</td>
<td>Method Used</td>
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<tr>
<td>149</td>
<td>Pimpinella tirupatiensis Bal &amp; sub. (Apiaceae)</td>
<td>Konda Kothimire Tuber</td>
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<td>150</td>
<td>Piper betle L. (Piperaceae) SV (300)</td>
<td>Tamalapaku Y</td>
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<td>151</td>
<td>Piper longum (Piperaceae) SV (291)</td>
<td>Pippallu Y Se Fr</td>
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<td>152</td>
<td>Plumbago zeylanica L. (plumbaginaceae) SV (82)</td>
<td>Tella I &amp; Y Se R</td>
<td>Chitramulamu</td>
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<td>153</td>
<td>Plumeria rubra L. (Apocynaceae) SV (322)</td>
<td>Deva ganneru I Fl</td>
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<td>154</td>
<td>Pongamia pinnata (L.) Pierre (Fabaceae) SV (11)</td>
<td>Kanuga Y Rb Sb Fl Fr</td>
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<td>155</td>
<td>Portulaca oleracea L. (Portulaceae) SV (527)</td>
<td>Pappukuraku I WP</td>
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<td>156</td>
<td>Psidium gujava L. (Myrtaceae) SV (257)</td>
<td>Jamachetty Y</td>
<td></td>
<td>L</td>
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<tr>
<td>157</td>
<td>Pterocarpus santalinus L. (Fabaceae)</td>
<td>Errachandnam Y &amp; I WP</td>
<td></td>
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<tr>
<td>158</td>
<td>Pueraria tuberosa (Roxb.ex.wills)DC. (Fabaceae) SV (54)</td>
<td>Vidari kandha I Tuber</td>
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<td>Common Name</td>
<td>V.</td>
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<td>159.</td>
<td>Punica granatum L. (Punicaceae) SV (28)</td>
<td>Dhanimma</td>
<td>Y</td>
<td>L</td>
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<td>160.</td>
<td>Raphanus sativus L. (Brassicaceae) SV (170)</td>
<td>Mullangi</td>
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<tr>
<td>161.</td>
<td>Ricinus Communis L. (Euphorbiaceae) SV (99)</td>
<td>Amudamu</td>
<td>Y</td>
<td>L</td>
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<td>162.</td>
<td>Rubia cordifolia L. (Rubiaceae) SV (30)</td>
<td>Manjistateega</td>
<td>Y</td>
<td>L</td>
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<td>163.</td>
<td>Salvadora persica L. (Salvadoraceae) SV (146)</td>
<td>Peddagugu</td>
<td>Ye</td>
<td>Sb</td>
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<td>164.</td>
<td>Sansevieria roxburghiana Schult. (Agavaceae) SV (345)</td>
<td>Chaga</td>
<td>I</td>
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<td>165.</td>
<td>Santalum album L. (Santalaceae) SV (42)</td>
<td>Srigandhamu</td>
<td>I</td>
<td>wood</td>
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<td>166.</td>
<td>Sapindus emarginatus Vahl (Sapindaceae) SV (85)</td>
<td>Kunkudu</td>
<td>Y</td>
<td>Fr</td>
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<tr>
<td>167.</td>
<td>Sarcostemma acidum (Roxb ) Voigt (Asclepiadaceae) SV (295)</td>
<td>Pandiri</td>
<td>Y</td>
<td>R</td>
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<tr>
<td>168.</td>
<td>Secamone emetica (Retz ) RBt ex.Skht (Asclepiadaceae) sV (195)</td>
<td>Palateega</td>
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<tr>
<td>169.</td>
<td>Semicarpus anacardium L. Nallajeedi (Anacardiaceae) SV (43)</td>
<td>I</td>
<td>Se</td>
<td>Corns, Leucoderma</td>
</tr>
<tr>
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<td>Species</td>
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<td>Use</td>
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<tr>
<td>170</td>
<td>Sesbania grandiflora</td>
<td>Avise</td>
<td>Y</td>
<td>Fl</td>
</tr>
<tr>
<td>171</td>
<td>Shorea tumbugaia</td>
<td>Thambajalri</td>
<td>I</td>
<td>St</td>
</tr>
<tr>
<td></td>
<td>(Dipterocarpaceae)</td>
<td>SV (216)</td>
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<td>Se</td>
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<td></td>
<td>N</td>
<td>resin</td>
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<tr>
<td>172</td>
<td>Sida cordifolia</td>
<td>Chirubenda</td>
<td>Y</td>
<td>WP</td>
</tr>
<tr>
<td></td>
<td>(Malvaceae)</td>
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<td></td>
<td></td>
<td>R</td>
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<td>173</td>
<td>Solanum nigrum</td>
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<td></td>
<td>(solanaceae)</td>
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<td>174</td>
<td>Solanum suiratense</td>
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<td>175</td>
<td>Solanum torvum</td>
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<tr>
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<td>(Solanaceae)</td>
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<td>176</td>
<td>Soymida febrifuga</td>
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<td>Fl</td>
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<td>(Meliaceae)</td>
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<td>177</td>
<td>Sphaeranthus indicus</td>
<td>Bodatharamu</td>
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<td>(Asteraceae)</td>
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<td>WP</td>
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<tr>
<td>178</td>
<td>Strychnos nux-vomica</td>
<td>Musti.</td>
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<tr>
<td></td>
<td>(Loganiaceae)</td>
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<td>179</td>
<td>Strychnos potatorum</td>
<td>Chilla</td>
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<tr>
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<td>(Loganiaceae)</td>
<td>Chettu</td>
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<table>
<thead>
<tr>
<th>No.</th>
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<tr>
<td>180.</td>
<td><em>Syzygium alternifolium</em> (Wall)</td>
<td>I</td>
<td>Diabetes, Stomach ulcers</td>
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<tr>
<td>181.</td>
<td><em>Syzygium cumini</em> (L.) Skeels Neredu</td>
<td>y</td>
<td>Dysentery, Leucorrhoea</td>
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<tr>
<td></td>
<td>(Myrtaceae) SV (342)</td>
<td></td>
<td>Earache, To get soft clear voice</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Sb Dyentery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fr Urinary Troubles</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>W Diabetes</td>
</tr>
<tr>
<td>182.</td>
<td><em>Tamarindus indica</em> L. Chintha</td>
<td>Sb</td>
<td>Diarrhoea, Gonorrhoea,Jaun</td>
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<tr>
<td></td>
<td>(Caesalpiniaceae) SV (341)</td>
<td></td>
<td>-dise Scorpion sting</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Fr Sprains, dysentery</td>
</tr>
<tr>
<td>183.</td>
<td><em>Tephrosia purpurea</em> (L.) pers. Vempali</td>
<td>N</td>
<td>Earache, Fertility, Post-partum treatment Tumour in the Stomach</td>
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<td></td>
<td>(Fabaceae) SV (8)</td>
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<td>184.</td>
<td><em>Terminalia alata</em> Heyne ex. Roth</td>
<td>N</td>
<td>Black spots</td>
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<tr>
<td></td>
<td>(Combretaceae) SV (337)</td>
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<tr>
<td>185.</td>
<td><em>Terminalia arjuna</em> Tellamaddi</td>
<td>L</td>
<td>Earache</td>
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<tr>
<td></td>
<td>(Combretaceae) SV (101)</td>
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<td>High Blood Pressure, Scorpion sting, Ulcers.</td>
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<tr>
<td>186.</td>
<td><em>Terminalia bellerica</em> (Gaertn.) Roxb.</td>
<td>N</td>
<td>Constipation due to indigestion, contraceptive, To prevent rats, scorpions and mosquitoes</td>
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<tr>
<td></td>
<td>(Combretaceae) SV (148)</td>
<td>Fr</td>
<td></td>
</tr>
<tr>
<td>187.</td>
<td><em>Terminalia chebula</em> Retz.</td>
<td>Y</td>
<td>Dysentery, Piles</td>
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<td>(Combretaceae) SV (340)</td>
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<td>188.</td>
<td><em>Terminalia pallida</em> Brandis.</td>
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<td>Swellings</td>
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<td>(Combretaceae) SV (160)</td>
<td>Sb</td>
<td>Ulcers</td>
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<tr>
<td>189</td>
<td>Terminalia paniculata</td>
<td>Pudimaddi</td>
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<td>190</td>
<td>Thespesia populnea (L.) Sol ex. corr.</td>
<td>Gangaravi</td>
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<tr>
<td>191</td>
<td>Tinospora cordifolia (Willd.) Miers ex. Hook.f.Thoms</td>
<td>Tippateega</td>
<td>I,Y</td>
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<tr>
<td>192</td>
<td>Toddalia asiatica (L.) Lam.</td>
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<td>Kasinta/Mirapagandra</td>
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<td>193</td>
<td>Tragia involucrata L. (Euphorbiaceae)</td>
<td>Nosantaku</td>
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<td>194</td>
<td>Tribulus terrestris L. (Zygophyllaceae)</td>
<td>Palleru</td>
<td>I</td>
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<tr>
<td>195</td>
<td>Tridax Procumbens L. (Asteraceae)</td>
<td>Balapaku/Gayapaku</td>
<td>L</td>
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<tr>
<td>196</td>
<td>Tylophora indica Burm.D.Merr. (Asclepiadaceae)</td>
<td>Kukka palateega</td>
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<td>197</td>
<td>Vernonia cinerea (L.) Less</td>
<td>Sahadevi</td>
<td>Y</td>
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<tr>
<td>198</td>
<td>Viscum articulatum Burm.Fl. (Loranthaceae)</td>
<td>Katta-badanika</td>
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<thead>
<tr>
<th>No.</th>
<th>Common Name</th>
<th>Latin Name</th>
<th>Plant Family</th>
<th>Botanical Name</th>
<th>Main Parts</th>
<th>Uses</th>
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<tr>
<td>99.</td>
<td>Vitex negundo L.</td>
<td>Nallavalli</td>
<td>Verbenaceae</td>
<td>Vitex negundo L.</td>
<td>Flower, Fruit, Leaf</td>
<td>Chronic fever, Epilepsy, Headache, Joint pain, Migraine</td>
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<td>200.</td>
<td>Waltheria indica L.</td>
<td>Nallabenda</td>
<td>Sterculiaceae</td>
<td>Waltheria indica L.</td>
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<td>Inflammations, Ulcers</td>
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<td>(Sterculiaceae) SV (52)</td>
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<td>201.</td>
<td>Wrightia tinctoria (Roxb.) R.Br.</td>
<td>Reppala/</td>
<td>Apocynaceae</td>
<td>Wrightia tinctoria (Roxb.) R.Br.</td>
<td>Root, Bark</td>
<td>Epilepsy, Cuts &amp; Wounds, Sore throat &amp; cough</td>
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<tr>
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<td>Palavareni</td>
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<td>202.</td>
<td>Xanthium indicum</td>
<td>Marula</td>
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<td>Xanthium indicum</td>
<td>Leaf, Root</td>
<td>Leucorrhoea, Fertility, Malarial fever</td>
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<tr>
<td></td>
<td>Koenig ex. Roxb.</td>
<td>Matangi</td>
<td></td>
<td>(Asteraceae) SV (208)</td>
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</table>

Acknowledgements:

The authors are grateful to the rural and tribal people of Chittor district, who whole-heartedly cooperated in sharing their knowledge and in the collection of the plant material for the study. The authors are also grateful to the International Development Research Centre (IDRC), Medicinal Plants Research Network, New Delhi for rendering assistance to the Herbal Folklore Research Centre, Medicinal Plants Research Unit, Department of Botany, Sri Venkateswarya Arts College, Tirupati, Andhra Pradesh, India.

Abbreviations Used:

<table>
<thead>
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>I</td>
<td>Irula</td>
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<tr>
<td>R</td>
<td>Root</td>
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<td>N</td>
<td>Nakkala</td>
</tr>
<tr>
<td>Rb</td>
<td>Root bark</td>
</tr>
<tr>
<td>Rh</td>
<td>Rhizome</td>
</tr>
<tr>
<td>S</td>
<td>Stem</td>
</tr>
<tr>
<td>Sb</td>
<td>Stem bark</td>
</tr>
<tr>
<td>Se</td>
<td>Seed</td>
</tr>
<tr>
<td>WP</td>
<td>Whole plant</td>
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REFERENCES:


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FITOTERAPIA
VOLUME LXIX - N. 1 - 1998
Ethno-medico botany of some aquatic Angiospermae in Chittoor district of Andhra Pradesh, India

K MADHAVA CHETTY*, M LAKSHMIPATHI CHETTY
Department of Botany, Sri Venkateswara University, Tirupati, India

A SUDHAKAR, C RAMESH
Department of Botany, Sri Venkateswara Arts College, Tirupati, India

Received April 21, 1997 - Accepted (revised) July 15, 1997

SUMMARY An ethno-medico botanical survey of aquatic Angiospermae of Chittoor district in Andhra Pradesh identified 39 species belonging to 36 genera and 26 families used by tribals and villagers for various ailments.

Key words: ethnomedicine, aquatic Angiospermae, India

Chittoor district, situated between 12°13' to 14°05' North latitude and 78°05' to 80°08' East longitude, is the southernmost region of the Andhra Pradesh (Fig. 1). The total geographical area of the district is 15,152 km². The soils are red loamy and red sandy types. The elevation varies from 50 to 750 m above sea level. The climate is dry and salubrious with a maximum temperature of 42°C and minimum of 14°C. The total population of the district is 122

Fig 1 - The surveyed region of Chittoor district, Andhra Pradesh, India

FITOTERAPIA Volume LXIX, No 1, 1998
million out of which 0.11 million are tribal inhabitants.\(^1\) The common tribal communities of the district are Yanadi, Irula, Sugah, Tanda, Yerukala and Nakkala.

Aquatic Angiospermae are very remarkable plants due to the habitat in which they spend most of their lives. These plants include species of various conditions such as true aquatics which are free floating, submerged or emerged ones, plants which grow just on the border line between water and land surfaces and plants which generally thrive in aquatic conditions.

The common habitats of aquatic Angiospermae in this area are a number of rivers, lakes, reservoirs, tanks, water falls, ponds, ditches and puddles. Some of these are useful for bathing, fish culture, etc., but a good number of them remain unused by human beings. The growth of large number of hydrophytes has drawn the attention of ethno-medico botanical survey of this district. So far, a systematic work on medicinal uses of these plants has not been done even if, in India, several workers have reported some hydrophytic vegetation of different parts of the country.\(^2\) The present work gives detailed information regarding the ethnomedical usage of some aquatic Angiospermae of Chittoor District.

**EXPERIMENTAL**

An ethno-medico botanical field survey was made in the rural and tribal areas of Chittoor district during 1995-96. The ponds and other sources of aquatic plants were visited in different seasons. Ethno-medico botanical information on the medicinal uses of aquatic Angiospermae was obtained from native doctors, age old persons, farmers, herbal specialists, etc., through interviews, discussions, personal contacts and observations.

The plant species were identified with the help of the flora\(^5\) and the nomenclature was updated by consulting the recent literature.\(^11\) Voucher specimens were deposited in the Herbarium of the Botany Department of S.V. University, Tirupati.

**RESULTS**

Plant species are arranged alphabetically with their botanical name, family, vernacular (Telugu) name (whenever available), medicinal uses, dosage and mode of administration.

*Acorus calamus* L. (Araceae), Vasa. The rhizome decoction (50 ml) is given early in the morning to improve digestion and to prevent acute diarrhoea, dysentery and fever.

*Alarmanthera sessilis* R.Br. (Amaranthaceae), Ponnagantu aku. Warmed leaves are bandaged over the eyes to cure red eye.

*Ammiantha baccifera* L. (Lythraceae), Agniwendraamu. The decoction prepared from 10 g of fresh leaves with 10 g of *Cyperus rotundus* L. roots and 5 g of fresh ginger is used for intermittent fevers. Whole plant is burned and ashes are mixed with til oil (*Sesamum indicum* L.) and applied to skin eruptions. Leaf infusion is given with warm water to decrease sexual desires in oxen.

*Aponogeton natans* Engl. et Krause (Aponogetonaceae), Nammadumpa. Leaf paste is applied to cure burns.

*Baropa monnieri* (L.) Pennell (Scrophulariaceae), Neerisambrani aku. The decoction prepared from 10 g of leaf powder and 2 g of zinger is taken once a
5 ml) for 3 days to cure flatulence in children. Roasted leaves are also
ed on the stomach at bedtime.

_Tetragonia ammanniana_ Roxb. (Elatinaceae). Whole plant infusion is applied to
scabies, wounds and cuts. Leaf decoction is used as an anthelmintic agent.

_Centella asiatica_ (L.) Urban (Apaaceae). Vallaraku. Leaf decoction (100 ml)
given orally twice a day for 2 months to cure leprosy (initial stages only). The
whole plant is chewed to cure diarrhoea and also acts as a blood purifier. Plant
water mixed with buttermilk is used as a brain tonic.

_Centella asiatica_ (L.) Urban (Apaaceae). Neem Sambaru. Plant paste is
applied on the affected part to relieve from scorpion sting.

_Colocasia esculenta_ (L.) Schott. (Araceae), Chama gadda. Tubers (10 cm) juice
mixed with the seed pulp of _Abrus precatorius_ L. is rubbed twice a day for 15
days to cure alopecia areata.

_Cyperus corymbosus_ Rottb. (Cyperaceae). Root decoction is said to cure stom-
achache and irritation of the bowels.

_Echinocloa colona_ Link. (Poaaceae), Oodaril. Whole plant decoction is
taken orally to promote digestion.

_Eclipta prostrata_ L. (Asteraceae), Gantagaliheru. Leaf paste with common salt
is rubbed twice a day for a fortnight to cure alopecia areata. Leaf juice (10 ml)
is taken orally at bed time for 3 days to cure intestinal pain. Whole plant is
boiled with water and the decoction (50 ml) is taken twice a day for a week to
cure jaundice (butter milk food without salt is taken during these days).

_Elephantopus compressus_ Solms. (Pontederiaceae), Gurrapudekka. Plant juice
is given to cure stomachache.

_Eriocaulon quinquangulare_ L (Eriocaulaceae). Leaf decoction is gargled to
cure throat pain.

_Hydroidea zeylanica_ Vahl (Hydrophyllaceae), Neelinakshataalu. Equal amount of
_Hydroidea, Aristolochia baetrolata_ Lam., and _Tridax procumbens_ L. leaves are
made into paste. This is applied to cure scabies, wounds and cuts.

_Hygroryza schulzii_ (Hamilt.) M.R. Almeida et S.M. Almeida (Acanthaceae),
Mullagobbi. Leaf decoction, mixed with 3-5 g of pepper powder, zinger and
caraway is taken orally (10 ml) once a day for a fortnight to cure joint and
body pains. Whole plant infusion is used to cure white patches on the skin.

_Hygroryza schulzii_ Nees. (Poaceae), Errachangala gaddi. Whole plant deco-
c tion is used to cure fever and headache.

_Hypericum japonicum_ Thumb. ex Murr. (Hypericaceae), Gantachamamun.
Leaves, made into paste with the leaves of _Dodonaea viscosa_ (L.) Jacq. and
turmeric powder, are applied to cure bone fractures.
Ipomoea aquatica Forsk. (Convolvulaceae), Totti koora. Decoction of the aerial parts is taken orally (25 ml) for one month to cure piles and expel intestinal worms.

Ipomoea carnea Jacq. (Convolvulaceae), Pala samudrum chettu. A spoonful of leaf powder is taken daily with warm water to reduce high blood pressure.

Lumnaphila indica Druce. (Scrophulariaceae), Burada bokkenaku. Leaf juice (20 ml) is given twice weekly for about 6 months to cure filariasis (initial stages only). Leaf infusion is given in diarrhoea and dysentery. Fresh leaves (5 g) are taken daily for one week as a relief from flatulence and as galactagogue.

Ludungia adscendens (L.) Hara (Onagraceae), Necti teegalu. Whole plant decoction (50 ml) is taken orally once a day for a week to expel intestinal worms. L. perennis L. is also used as a substitute for L. adscendens.

Monochoria vaginalis Presl. (Pontederiaceae). About 50 ml of leaf juice are taken orally, once a day for 3 days, to cure fever and cold and also to prevent excess bleeding during menstruation (menorrhagia).

Nelumbo nucifera Gaertn. (Nymphaeaceae), Tamara.
One tablespoonfull of dry fruit powder is mixed with honey and taken as a tonic. Root and flower powder (5 g) is taken with warm water daily for a month as blood purifier.

Neptunia oleracea L. (Mimosaceae), Tedduskadala mokka.
Stem juice is instilled into the ear to cure earache. The root and stem decoction is used to cure gonorrhoea.

Nymphaea nouchali Burm. f. (Nymphaeaceae), Kaluva.
Root powder (10 g) is taken twice a day for a week to cure dysentery and diarrhoea.

Nymphaea pubescens Willd. (Nymphaeaceae). Seed powder (1 g) is taken daily for 10 days as an antiinflammatory agent.

Nymphodes hypophylla (Lour.) Kuntze (Menyanthaceae), Putta kaluva. Leaf powder (10 g) is taken orally with a glass of warm water to expel intestinal worms. Leaf paste, mixed with ul oil (Sesamum indicum L.) is applied to cure honey-bee and wasp bites.

Ottelia alismoides (L.) Pers. (Hydrocharitaceae), Edakula tamara. Leaf paste is applied to prevent overbleeding due to cuts.

Phyla nodiflora (L.) Greene (Verbenaceae), Bokkinaku. Whole plant is shade-dried and the powder is given orally (2 g) along with milk to cure fever and cold followed by cough. Chutney (paste) made from the tender shoots is eaten to promote digestion and also used in post-partum treatment.

Pistia stratiotes L. (Araceae), Antara tamara. Leaf juice is applied to cure various skin diseases. Leaves are made into paste with alcohol and pills of sapnut size are prepared. Two pills are given daily for a week. This results in contraception. Leaf paste made with castor oil is applied to cure joint pains.

Polygonum glabrum Willd. (Polygonaceae), Burada gogu. Leaf decoction is prepared from Polygonum, Eclipta prostrata (L.) L. Mant., and Phyllanthus
_Amarus_ Schum (equal quantities). About 20 ml of this decoction are given on empty stomach once a day for a week to cure jaundice.

_Rotala pentandra_ (Roxb.) Blatter et Hallib (Lythraceae). Leaf paste is applied on the forehead as a relief from migraine.

_Sesuvus articulatus_ L. (Cyperaceae). Whole plant paste is applied into the vagina to cure vaginal itching.

_Stemodia viscosa_ Roxb. (Scrophulariaceae), Gunta kaamini. Leaf paste is applied on the skin at bedtime. This results in smoothening and shining of the skin.

_Typha angustata_ Bory et Chaub (Typhaceae), Jammu. Spikes are made into paste with red soil and applied to set right bone fractures. Leaf juice (25 ml) is taken early in the morning for 2 days as a relief from fever.

_Vallisneria natans_ (Lour.) Har-a (Hydrocharitaceae). Whole plant decoction (25 ml) is given once a day for a week to prevent white discharge in women and as a relief from stomachache during menstruation.

DISCUSSION

Most of the people in remote habitats of the surveyed region depend on their doorstep native medicine. This is due to both lack of faith in modern medicine and poverty. The people discovered many herbal drugs for various ailments, viz. dysentery, diarrhoea, intermittent fever, alopecia areata, jaundice, earache, headache, stomachache, scabies, wounds, cuts, cough, cold, fever, pains, filariasis, bone fractures, skin diseases (affecting most of the country people and tribals), poisonous bites (scorpion sting, wasp and honey-bee bites).

The survey has shown that among aquatic Angiosperms of Chattoon district there are some plants particularly identified by several tribal and rural people for specific ailments. For example, _Monochroma vaginalis_ is used for monorrhagia, _Hydrolepia zeylema_ leaves counteract scabies and are effective as an antiseptic for wounds and cuts, _Ipomoea carnea_ reduces high blood pressure, _Neptunia oleracea_ cures gonorrhoea, _Polygonum glabrum_ is effective in curing jaundice, _Typha angustata_ is used as plaster to set right bone fractures.

The above information gathered from the informants revealed that cheap crude drugs obtained from the plant sources still play a major role in rural and tribal areas for curing numerous organic problems. Further studies are deserved and needed to assess the potential of these newly reported treatments both in primary health care and as source of new drugs.

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Medicinal importance of some angiospermic weeds used by the rural people of Chittoor district of Andhra Pradesh, India

A SUDHAKAR.
Department of Botany, Sri Venkateswara Arts College, Tirupati, India

K MADHAVA CHETTY
Department of Botany, Sri Venkateswara University, Tirupati, India

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SUMMARY An ethnobotanical survey of some angiospermic weeds in agricultural lands of Chittoor district in Andhra Pradesh was conducted during 1994-1996, representing 100 species belonging to 92 genera and 39 families. Their use for the treatment of various ailments was recorded.

Key words: ethnobotany, agricultural weeds, India

Chittoor district, the southernmost region of Andhra Pradesh, has a total population of 3.22 million of which 2.62 million are living in rural areas. The most important communities of the district (Kamma, Kapu, Balija, Konda Reddy, Harijana, Jangama, Padmasali, Vaddi, Kamsali, Kumari, Tsakali, Gandla, Mangali, Irula, Yanadi, Sugali, Tanda, Yerukala, Nakkala, etc.) are also experienced with the medicinal uses of plants of this area. Out of the total geographical area of the district (1.5 million hectares) 0.41 million hectares are agricultural lands, generally cultivated for crops such as groundnut, sugarcane, paddy, finger millet, pearl millet, sorghum, Indian corn, pigeon-pea, chick-pea, horse gram, green gram, mulberry, tomato, etc.

About 300,000 species of angiosperms are known in the present day, of which 30,000 are weeds. Among these, 100 species of weeds are reported by the authors for their ethnobotanical value in Chittoor district. So far, only some reports have been appeared on the medicinal use of flora of this area. Therefore, it is now intended to present here an account on the occurrence of weed plants of medicinal value. In spite of their nuisance value, some common weeds described here are used in medicine in crude form by these people.

EXPERIMENTAL

An ethnobotanical field survey was made in the agricultural lands of Chittoor district since January, 1994 to December, 1996. The data on the medicinal uses of agricultural weeds were gathered from local healers, local and tribal medicine men, age old persons, mid-wives, farmers, sadhu's (Hindu holy men with deep knowledge on native medicine) and other dwellers having high degree of knowledge in herbal medicine. The method of preparation, dosage, timing and mode of administration of each identified drug were recorded. The mode of living, type of housing and practices of cultivation of the informants were also made part of the study.

The plant species were collected and identified with the help of South Indian and local florists. Voucher herbarium specimens were deposited in the Herbarium of Botany Department, S.V. University, Tirupati.
RESULTS

Plant species are arranged alphabetically by botanical name with family (within brackets), vernacular (Telugu) name (whenever available), medicinal uses, dosage and mode of administration.

Abutilon indicum (L.) Sweet (Malvaceae), Kammaluku. Leaf powder (50 g), donkey dung (100 g) and camphor (25 g) are pounded, warmed and tied around the testicles as a plaster with white cloth at bed time and kept overnight. In the next day morning the plaster is removed and dried tobacco leaves are tied over the testicles up to evening. This process is repeated for a week to cure hydrocele. Leaf paste is applied on the teeth to cure toothache. Root paste is applied to cuts and wounds to prevent sepsis. Leaf decoction (25 ml) is taken orally twice a day for about 2 weeks to cure bleeding piles.

Acalypha indica L. (Euphorbiaceae), Kuppintaku/Kalsaku. Leaf juice (3 drops) is instilled into the ear to relieve earache. Leaf paste is introduced into rectum to relieve from constipation due to indigestion in children. Dried leaf powder (3 g), mixed with ginger powder (1 g) and honey (one tea spoonful is taken orally in the morning for 5 days to expel intestinal worms. Whole plant is dried and burnt and ashes are rubbed all over the body at bed time for a month, this results in smooth, fair and radiant skin.

Acanthospermum hispidum DC. (Asteraceae), Mullapallercu. Leaf juice applied to cure eczema and leaf decoction (20 ml) is taken orally twice a day for 5 days as relief from cough and pneumonia.

Achyranthes aspera L (Amaranthaceae), Uttareni. The plant is boiled and the liquid extract (50 ml) is administered daily for 15 days to cure renal disorders. Root paste is placed inside the vagina to hasten labour pains and topically applied to reduce the pains of scorpion sting. Whole plant ash (10 g) is mixed with 10 ml coconut oil and rubbed on the face at bed time daily for 1 month to develop smooth, silky and fairy skin. Root and stem branches are used as tooth brushes.

Aerva lanata Juss (Amaranthaceae), Pindipoolu. Equal amounts of the whole plant and the fruits of Tribulus terrestris L., are made into powder and boiled with water. The liquid extract is taken orally (50 ml) twice a day for 45 days to dissolve kidney and gall bladder stones. Flowers and leaves are chewed to cure dysentery and diarrhoea in children.

Ageratum conyzoides L. (Asteraceae) Equal quantities of leaves and the whole plant of Cuscuta reflexa Roxb. are made into paste and topically applied to cure cuts and wounds. Leaf and stem decoction is applied externally on the abdomen of the person suffering from diarrhoea and dysentery. Equal amounts of leaves of Ageratum and neem (Azadirachta indica A. Juss) are made into paste and pills are prepared (soapnut size). 3 pills are given daily for 9 days to reduce the intensity of smallpox.

Alternanthera sessilis R. Br. (Amaranthaceae), Ponnagantiaku. Leaves are warmed and cooled and used as bandage over the eyes in the case of eye redness. The leaves are eaten as vegetable curry to promote digestion. The decoction prepared from 10 g of stems and 5 g of Leucas aspera Spr. leaves is taken orally twice a day for 3 days in the case of snake bite and scorpion sting.
Amaranthus roxburghianus Niesv. (Amaranthaceae), Churahkan. Root paste (10 ml) is given 2-3 times a day for 7 days for abortion. Leaf powder, when mixed with 5 ml of honey is taken orally to cure severe stomachache.

Amaranthus spinosus L. (Amaranthaceae), Mullalattu. Root decoction (20 ml) is taken orally once a day for 20 days to cure gonorrhoea, aphthas and reduce overbleeding during menstruation.

Anaphalis latini (Hook.f.) Gamble (Asteraceae), Tellamokka. Leaf paste is applied to cure wounds and cuts and leaf decoction (20 ml) is administered twice a day for 5 days to cure intermittent fever.

Andrographis paniculata (Burm.f) Wall ex Nees (Asteraceae), Valanmai. The fresh juice of tender leaves (10 ml) is taken orally early in the morning for 10 days to remove intestinal worms. Whole plants of Andrographis, Phyllanthus amarus Schum., and Eclipta prostrata L. (equal amounts) are shade-dried and powdered (total of 30 g); decoction prepared by adding one glass of water is taken once a day for 15 days to improve appetite and to cure abdominal pains.

Anisomeles indica (L.) Kunze (Lamiaceae), Aadvare. The leaves with the leaves of Ocimum tenuiflorum L. in equal quantities are pounded with tumeric (Curcuma longa L.) powder; this mixture is put on fire and the smoking lime ashes are inhaled to cure cold and cough (this therapy is repeated for about 1 day).

Anisomeles malabarica (L.) R.Br.ex Sims. (Lamiaceae), Magabeera. Root decoction is gargled in order to soothe toothache and 2 tea spoonfuls are taken orally twice a day for 3 days to cure fever. An infusion of the herb is considered as carminative. Leaf juice is squeezed on the affected part of poisonous bites to relieve pain.

Argemone mexicana L. (Papaveraceae), Kusmapala. Fresh root juice is applied to cure scabies. The latex is used for drops and applied externally to cure eye redness. Seeds are rubbed on the tooth to cure toothache. Intake of seed causes vomiting and diarrhoea followed by body pains.

Aristolochia bracteolata Lam. (Aristolochiaceae), Caddhagadapa. Leaf juice (3 ml) mixed with mother milk (5 ml) is given orally once a day for 5 days to promote children appetite. Poultice of leaf is applied to cure wounds.

Asystasia gangetica Anders. (Acanthaceae), Podabileera. Whole plant paste is applied on tuberculous glands of the neck. Leaf juice (10 ml) is given orally along with the leaf juice (10 ml) of Andrographis paniculata to expel intestinal worms.

Bidens pilosa L. (Asteraceae), Verri chinnabanti. Applications of leaf steeped in hot water are considered very effective in healing of cuts and burns. Leaf paste is applied on the forehead to cure headache.

Blepharis maderaspatensis (L.) Heyne ex Roth. (Acanthaceae), Antintapotolu. Leaf decoction (20 ml) is taken daily for a week to cure cough and throat pain. Equal amounts of the leaves and leaves of Abrus precatorius L. are boiled and the decoction is smeared on the white patches of the skin.

Blumea oxyodontia DC. (Asteraceae), Rekkada. Leaf paste is made with hot water and applied around the belly to relieve stomach pain. Leaf juice (50 ml) is given orally, once in 3 days for 2 months, to cure bleeding piles.
*Boerhaava diffusa* L. (Nyctaginaceae), Atikamamidi. Root paste mixed with castor oil is applied inside the vagina to facilitate delivery. A paste of the whole plant is made into pills of soap nut size and 3 pills are given thrice daily for 7 days to cure jaundice. Leaves (5 g) are made into paste with garlic (1 g) and ginger (1 g) and taken orally at bed time, every day for about 1 week, to improve digestion and free motion.

*Calotropis procera* (Ait.) R.Br. (Asclepiadaceae), Erragilledu. Shoot tip (peanut size) is kept in Plantain fruit (Ripend Bannana) and given on empty stomach to cure severe menstrual pains. About 10 g of flowers are mixed with 10 black pepper grains and 3 g of common salt and made into paste; pills of peanut size are prepared and 3 pills are given thrice a day for a week to cure malarial fever in children. A warm mixture of latex (5 ml), turmeric powder (1 g) and mustard oil (5 ml) is smeared to cure itches and wounds affected by scabies. Tender twig containing latex is inserted into vagina for abortion (3-month old pregnancy).

*Cassa absus* L. (Caesalpiniaceae), Chanupala vittulu. Seed paste is applied to cure itching due to scabies. Root decoction (25 ml)) is taken daily for about 15 days to cure constipation.

*Cassia mimosoides* L. (Caesalpiniaceae), Nelaponna. Root (5 g) and pepper (10 seeds) are boiled with a glass of water and the decoction is taken once a day for 3 days to cure severe constipation.

*Cassia occidentalis* L. (Caesalpiniaceae), Kasindha/Eddukommaku. Equal amounts of leaves and leaves of *Ormocarpum cochinichenense* (Lour.) Merr. are made into paste with white yolk of egg and used as plaster to hasten the healing process of severe bone fractures. Chewing of leaves is used to cure itches.

*Celosia argentea* L. (Amaranthaceae), Gurugaku. Seed powder (10 g) is boiled with a glass of water and the decoction is administered for a week to cure diarrhoea and stimulate sexual desires.

*Centella asiatica* (L.) Urban. (Apiaceae), Saraswathi/Vallarakku Leaf decoction is given orally to cure leprosy (initial stages only). Leaf powder mixed with sour milk is taken to improve memory power. Whole plant is chewed to cure diarrhoea, headache, delirium and used as a blood purifier.

*Citrullus colocynthis* (L.) Schrad (Cucurbitaceae), Verripuccha. Root juice (5-6 drops) is poured into the ear for 3 months to cure deafness. Warmed leaves are applied on the forehead to cure migraine. Fruit, made into paste with turmeric and little water, is applied to cure pimples.

*Cleome gynandra* L. (Cleomaceae), Manchi vominta. Leaf juice is applied on wounds to prevent pus formation, also poured (4-5 drops) into ear to cure earache. Leaf paste is applied on the forehead to cure headache due to stress.

*Cleome viscosa* L. (Cleomaceae), Kukka vominta. A teaspoonful of seed powder is mixed with a glass of warm water and taken on empty stomach for a week to expel intestinal worms. Leaf juice (3-5 drops) is poured into ear for earache.

*Chitornia ternatea* L. (Fabaceae), Sankupuwu. Leaf juice is applied to cure swellings. Seed powder is used as laxative. Root juice (10 ml) with milk (5 ml) is used in vomitings.
Coriandrum sativum (L.) Diels (Mumispermaeae). Disarateeza. Root decoction (20 ml) is taken orally once a day for 8 days to cure rheumatism and stomach pain. Leaf juice (10 ml) is taken twice a day for 25 days to cure gonorrhoea.

Commelina benghalensis L. (Commelinaeae). Vennedia. Leaf decoction (30 ml), taken on the first day of menses for 5 days, results in contraception (each month, for two years).

Corechus trioculans L. (Tiliaceae). Bunkulium. Seed decoction (10 ml) is given orally twice a day for 2 days at bedtime to cure intermittent fever. The seed paste is applied daily for two weeks to cure scabies.

Crotonaria verrucosa L. (Fabaceae). Gilliguthi. Seed powder (5 g) is taken along with a glass of water for 3 days for abortion. Leaf juice is topically applied to cure wounds, cuts, and scabies.

Ctenanthes gaffrini (Burm.f.) Clarke (Cucurbitaceae). Gahmunnalu. Seed paste is topically applied to cure wounds, cuts, boils, and inflammations.

Cyanotis tuberosa (Roxb.) Schultz. et Schult. f. (Commelinaeae). Nidra gadadku. Root decoction (10 ml) is taken orally twice a day for 3 days to cure intermittent fever. Root paste is topically applied to cure wounds attacked by worms in animals.

Cynodon dactylon (L.) Pers (Poaceae). Garika gaddi. Whole plant juice (10 ml) is taken orally on empty stomach (3 days) for menorrhagia and applied topically for cuts and wounds.

Cyperus rotundus L. (Cyperaceae). Tunga gaddi. Roots (5 g) and ginger (1 g) are made into paste with water and taken orally for 10 days to cure stomach disorders. The root paste (5 g) added of 2 spoonfuls of honey is taken orally for 5 days to cure dysentery and active diarrhoea.

Dactyloctenium aegyptium (L.) Wild. (Poaceae). Erriragi. Dried seed powder (5 g), taken along with a glass of water twice a day for 5 days, is said to cure stomachache in women after childbirth.

Desmodium triflorum (L.) DC. (Fabaceae). Muntamandu. Leaf juice (50 ml) is taken orally 2 days once for 10 days as a galactagogue to cure cough. Leaf paste is applied on the affected part to cure scabies.

Digera muricata (L.) Mart. (Amaranthaceae). Chenchullaku. Whole plant decoction (20 ml) is taken orally twice a day for 3 days to cure burning sensation while passing urine.

Diplacys palnatus (L.) Jeffrey (Cucurbitaceae). Lungadonda. Decoction made from the seeds (5 g) and 2 seeds of Abrus precatorius L. is given orally early in the morning for 5 days, to induce fertility in women.

Echinocloa colona (L.) Link. (Poaceae). Oodharlu. Whole plant decoction (10 ml) is taken orally once a day for a week to promote digestion and improve appetite.

Echinops echinus L. Roxb. (Asteraceae). Mullabanti. Roots are tied around the neck as necklace to stimulate sexual desires in men.
Elephantopus scaber L. (Asteraceae), Mullameesalu Root paste is applied on sores and also used as a drink with little water in treatment of headache, fever, cold and cough. The whole plant decoction (10 ml) is drunk, once a day for a week, for chapped lips

Fetidra postelata L. (Asteraceae), Gunça. Leaf juice mixed with common salt is applied to cure alopecia areata and also taken orally (10 ml) to cure intestinal pains. Whole plant is boiled with water and the extract (50 ml) is taken on empty stomach for a week to cure viral hepatitis. Leaves are rubbed on the teeth to cure toothgums and foul breath.

Enicostema axillare (Lam.) Rayal (Gentianaceae), Guldendi. Powder from the aerial parts (10 g) is taken orally along with a glass of sour milk for a week to cure stomachache and expel intestinal worms.

Euphorbia haria L. (Euphorbiaceae), Pacchabottu. Leaf decoction (20 ml) is administered for 10 days to cure asthma, dysentery and diarrhoea. Leaf juice is also directly squeezed into the eyes to cure eye troubles

Evolvulus alsinodes (L.) (Convolvulaceae), Vishnukantha. Equal amounts of roots and Ammi majus L. fruits are boiled with water and decoction (50 ml) is taken thrice daily for a fortnight to cure typhoid fever. The powdered root (5 g) is given orally daily for 18 days as galactogogue.

Glossocarpa bosvalleii (L.f.) DC. (Asteraceae), Parapalanamu. Whole plant juice (25 ml) is administered at bed time for a fortnight to cure vaginal itching. Leaf decoction (10 ml) is taken twice a day for 5 days to cure leucorrhoea and menstrual pains.

Graega madhavanatana (L.f.) DC (Asteraceae), Machupatri. Equal amounts of flower and sandal wood are made into paste and smeared on lips to restore consciousness during high fever.

Hedyotis puberula (G.Don.) Arn. (Rubiaceae), Chiriveru. Teaspoonfuls (2-4) of decoction prepared from the root and the leaves of Adhatoda zeylanica Medik. are administered twice a day for a month to cure asthma.

Homndesmus indicus (L.) R.Br. (Asclepiadaceae), Sugandhapala. A cup of root decoction with sugar is taken twice a day for 15 days to cure cardiac diseases. The roots are soaked in coconut oil and used as hair tonic.

Hybaurhth enneaspermus (L.) F. Muell. (Violaceae), Ratnapurusha. Whole plant juice (2 teaspoonsfuls) is taken for one month to improve sexual desires. Leaf powder (5 g) and honey (5 ml) are mixed and taken twice a day for a week to cure fever, cough and cold and improve digestion. Leaves (50 g) mixed with garlic (5 g) and made into paste, are taken orally along with a glass of water once a day for 2 days for cobra bite.

Hygropha salacifolia (Vahl) Nees (Acanthaceae), Neerugobbi. Whole plant decoction (25 ml) is taken orally for a month as sexual stimulant.

Hyptis suaveolens (L.) Poit. (Lamiaceae), Dantutulasi. Leaf extract is applied on the white patches of the skin daily for one month.

Ipomea obscura (L.) Ker-Gawl. (Convolvulaceae), Kolliteega. Warmed leaves with leaves of Dodonaea viscosa (L.) Jacq. are used in inflammations of the legs. Aerial parts are fed to cow to increase milk secretion.
Juice is applied to cure wounds, cuts and burns. Leaves warmed over the forehead is used to cure fever. Root paste are applied on the testicles at bedtime for 10 days to cure skin diseases.

Leaf extract is instilled into ear to cure earache. Root paste is applied on wounds, cuts and swellings.

Whole plant decoction (5 ml) is taken orally along with sugar and a pinch of common salt for stomach ache. Leaf extract is smeared all over the body as relief from scorpion sting and snake bite.

Leaf paste is warmed and applied over the head to keep off evil spirits. Leaf extract is poured into a glass of cow’s milk, then administered to patients for a fortnight to cure anaemia.

Leaf decoction (5 ml) and a handful of flowers are mixed with a little common salt for stomachache.

Leaf paste is applied over the head to cure fever in children. The whole decoction is taken orally once a day for 3 days to cure cough, cold and fever.

Leaf paste is warmed and applied over the head to cure hydrocele. Leaf infusion is given along with honey as tonic.

Leaf decoction is administered once a day for 3 days to cure cough, cold and fever.

Leaf juice (3-5 drops) is instilled into ear to cure earache.

Leaf decoction (5 ml) is administered once a day for 3-5 months to gradually reduce fertility in men.

Leaf juice (40 ml) is taken orally once a day for 2-3 months to gradually reduce fertility in men. Leaves (5 g) mixed with pepper (3 seeds) are chewed for foul breath. Leaf decoction (5 ml) is administered once a day for 3 days to cure cough, cold and fever.

Root paste is applied over forehead to cure headache. The whole plant (50 g) is ground with seeds of Cleome viscosa L. (5 g) and the paste is warmed up and then applied over affected part to cure skin diseases.

Pedalium murex L. (Pedaliaceae), Pedda palleru. Fruit decoction (25 ml) is given orally twice a day for 5 days to cure vaginal itching and act as aphrodisiac.

Pergularia daemia (Forsk.) Chiov. (Asclepiadaceae), Juttupaku. Leaves (10 g) are crushed with a little common salt and the extract is poured directly into the eyes of animals to cure eye diseases. Fresh shoot tip introduced into nose results in continuous sneezing. This relieves from cold.

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Penstrophe paniculata (Forsk.) Burm. (Acanthaceae), Chebura. Leaf juice is applied to cure wounds attacked by worms in animals

Phyllanthus nodiflora (L.) Greene (Verbenaceae), Bokkenaku. Leaf powder (10 g) is given orally along with warm water once a day for 3 days to cure fever, cold and cough. Tender parts of the plant are made into paste and daily eaten (5 g) to promote digestion.

Phyllanthus amarus Schum. (Euphorbiaceae), Nelausri. Leaves and fruits are made into paste with flower buds of Traga involucrata L. (equal amounts) and applied on the forehead as relief from severe headache.

Physalis minima L (Solanaceae), Budamkaya/Buddabushada. The whole plant (50 g) is boiled in coconut oil (50 ml) and the whole mixture is applied over the head as a remedy for headache. Fruits are made into paste with the leaves of Sanseveria roxburghiana Schult. et Schult.f (equal amounts) and applied to cure gonorrhoea.

Plumbago zeylanica L. (Plumbaginaceae), Tellachitramulamu. Whole plant decoction (15 ml) is taken orally once in 2 days at bed time for a fortnight to get relief from piles and skin diseases. Root and seed paste is used for caries. Root causes abortion when introduced into vagina with the roots of Calotrops gigantea (L.) R.Br. Root paste (2 g) in cow milk (50 ml) is given for a week to prevent conception.

Pothoarca corymbosa (L.) Lam. (Caryophyllaceae), Bommasari/Rajuma. Whole plant paste (5 g) with rice-washed water (50 ml) is taken orally twice a day for a week to cure syphilis and gonorrhoea. Leaf paste is applied externally on the affected part of poisonous bites.

Portulaca quadrifida L. (Portulacaceae), Goddupavali. Leaf powder (5 g) mixed with a glass of warm water is given thrice a day for 3 days to cure diarrhea. Leaf paste is applied topically to cure inflammations, wounds and cuts.

Pulicaria unghitiana (DC.) Clarke (Asteraceae), Adavi Poddhutirugudu. Root decoction (3 ml) is taken once a day for 5 days to cure intermittent fever and dysentery. Leaf paste is applied to cure burns and wound.

Pupalia atropurpurea (Lam.) Moq. (Amaranthaceae), Antreetha. Leaf paste is applied as antidote to scorpion sting.

Scilla hyacinthina (Roth.) Macbride (Liliaceae), Ellagaddalu. The bulb extract is smeared around the navel region to relieve from stomachache. The tuber is useful in vomiting.

Secularia dulcis L. (Scrophulariaceae), Pottuboli. The leaf extract is applied on the body surface to cure ringworms, eczema and glandular swellings. Plant paste is applied on forehead to cure migraine.

Sida acuta Burm. (Malvaceae), Nelabenda/Vishnuboddi. Leaves are pounded and applied to boils. Root decoction (5 ml) is taken early in the morning as a laxative.

Sida cordifolia L. (Malvaceae), Chirubenda. Powdered roots (10 g) are boiled with a glass of water and the decoction is drunk as laxative and to cure intermittent fever. Root paste is applied on the wounds.
Sigesbeckia orientalis L. (Asteraceae). Rekkalarav. A cup of whole plant decoction is given at bed time for one week to expel intestinal worms. The leaf juice is applied to cure wounds and cuts.

Solanum nigrum L. (Solanaceae). Kachi. Fruit powder mixed with til oil is applied on the head for turning white hair into black and to cure all types of headache. Paste made from the aerial parts is taken to promote digestion.

Spermacoce hispida L. (Rubiaceae). Madhanakattu. Leaf paste is used to cure toothache. Whole plant when eaten by cows and buffalos improves milk production.

Sphaeranthus indicus L. (Asteraceae). Bodaasavamu/Bodatharamu. Whole plant paste is applied as a smear to relieve piles. Root decoction is taken at bed time for 3 days to expel intestinal worms. Leaf decoction (3 spoonfuls) is taken once a day for 3 days to cure cough, cold and fever.

Teramnus labialis (L.f.) Spreng. (Fabaceae), Mashaparni. Seed powder (5 g) boiled with a glass of water and taken orally once a day for 4 days cures fever, acts as sexual stimulant and improves milk production in women.

Tephrosia purpurea (L.) Pers. (Fabaceae), Vempali. Leaf (25 ml) is taken orally for 5 days to cure excess of acidity and rheumatism. Whole plant decoction (10 ml) is taken orally once a day for 5 days to expel intestinal worms and acts as a blood purifier and laxative.

Tinospora cordifolia (Willd) Hook.f. et Thoms. (Menispermaeae). Tippateega. Dried stem powder with honey is used as tonic. Whole plant powder is used as tonic and in all types of fevers. The stem decoction is given thrice daily (10-15 ml) for 5 days to cure malarial fever.

Tribulus terrestris L. (Zygophyllaceae), Nella Palleru. Seed powder (10 g) boiled with 0.5 l of milk is taken orally 3 times daily as an aphrodisiac and to dissolve kidney and gall bladder stones.

Trichodesma zeylanicum (Burm.f.) R.Br. (Boragianaceae), Peddaguragutti. Leaf paste is applied to cure wounds and boils. Decoction of the leaves with the leaves of Adathoda zeylanica Medik is taken orally (5 ml) twice a day for 2 days to cure cough and cold.

Trichosanthes monsoni (L.f.) Bennet (Amaranthaceae), Erpapindi poolu. Whole plant is made into paste with unboiled rice washed with water and taken orally (50 ml daily) for 15 days to prevent discharge of semen in urine. Plant decoction (10 ml) is taken orally for 5 days to remove swelling.

Tridax procumbens L. (Asteraceae), Balapaku/Gaddi chamanti. Leaf paste is made with turmeric powder and applied to cure wounds and cuts. Leaf juice is applied externally as relief to itches and burns. Equal quantities of Tridax and Ansochus cervicesus (L.f.) Wall. ex Benth. leaves are made into paste and applied to cure fissures and wounds on the feet.

Tylophora indica (Burm.f) Merr (Asclepiadaceae), Mekamiyankali. Root decoction is applied over the body to cure body pains. Leaf powder (2 g) is taken orally along with water in diarrhoea and dysentery. Two tender leaves are chewed along with a glass of warm water early in the morning for a week as relief from asthma. Leaf fumes are used as mosquito repellent.
Vernonia cinerea (L.) Less (Asteraceae), Sahadevi/Garitakami. Seed powder (2 g) mixed in a cup of water is taken orally for 5 days to expel intestinal worms. Seed paste is applied to cure leucoderma.

Vigna aconitifolia (Jacq.) March (Fabaceae), Pillipesara. Seed powder (2 g) is taken orally along with a glass of water twice a day for 3 days to expel intestinal worms and to cure fevers.

Walthera indica L. (Sterculiaceae), Nallabenda. Root decoction (50 ml) is taken orally on empty stomach as an abortifacient (intercourse is avoided for one month after abortion). Whole plant decoction (25 ml) is daily taken orally by labourers as a restorative during hard working.

Xanthium indicum Koem. (Asteraceae), Marlu. Seed powder (5 g) is boiled in a glass of water and taken once a day for a month to dissolve kidney and gall bladder stones. Leaf paste is made with turmeric powder and applied to cure wounds and cuts.

DISCUSSION

Agricultural lands not only provide food and shelter to the rural people but also many weeds of medicinal importance. The use in medicine of these unwanted guests in agricultural lands had been a long practice by man since ancient times.11

The present study reveals that the rural people of the surveyed region discovered and still use many weed herbal drugs for various ailments. Some traditional informants hesitated to transfer their knowledge, as they believe that the efficacy of the recipe would be lost once disclosed.

Our survey has brought to light numerous medicinal and other useful plants and most of the uses recorded are new. For example, Abutilon indicum and Mirnosa pudica are used for hydrocele; Acanthospermum hispandum is used to cure pneumonia, Acalypha indica and Achyranthes aspera for bright, smooth and radiant skin development; Ageratum conyzodes is effective against small-pox, Amaranthus spinosus and Physalis minima are used in sexual diseases; A conyzodes, Anaphalis lanata, Cnidoscolus garrini, Cynodon dactylon and M pudica are used as antiseptic for wounds and cuts; Calotropis procera and Glossocarida bosaelsea are very effective in curing severe menstrual pains. C procera, Cassia abus and C occidentalis counteract skin infections; Commelina benghalensis for contraception, Cyanotis tuberosa and Penstrope paniculata act as worm killers; Echinops echinatus and Hygrophila salicifolia act as sexual stimulants; Trichurilla monsoniae is used to prevent semen in urine.

Cassia occidentalis and Ormoscarpum cochinchinense are widely used in setting severe fracture of bones. The village called “Puttur” is very famous for setting up bone fractures by using these two plants. Not only in the state of Andhra Pradesh but also some patients from the southern parts of India are coming there for proper setting up of bone fractures. The families of the entire village are very experienced in bone setting and depend only on these practice for their livelihood.

Further studies, particularly in the pharmaco-toxicological field, are needed to assess the efficacy and safety of these new folk medicine and their potential.

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Temperature for any illness is diagnosed as fever or over-heat. As a line of treatment, they first stop giving food to the patient. Yanadis treat the patient of fever by admiring decoction of the rhizome of Sathavari, *Asparagus racemosus* or of Tunga mustha (*Cyperus rotundus*); while Sugalis treat fever with a decoction prepared from garlic, ginger, tippateega (*Tinospora cordifolia*); while another tribe Nakkala prepares decoction with garlic, nelavemu (*Andrographis paniculata*); if nelavemu is not available the bark or root of Maddi (*Morinda tinctoria*) with the roots of regu (*Ziziphus mauritiana*) are used in the decoction.

In the case of severe headache Yanadis prepare paste from ‘sonthi’ (*Zingiber officinale*) and on to the patients forehead They grind managakaya (*Catunaregam spinosa*) into a fine paste and apply it to the eye instead of sonthi therapy. For still severe head ache, leaves of chitti kesaram (*Delonix alata*) or leaves of vavili (*Vitex negundo*) are roasted light black and tied to the head while Nakkala tribe uses the roots of regu (*Ziziphus mauritiana*) with the roots of sonthi (*Zingiber officinale*) is administered orally or the leaf powder of sunamuki (*Cassia senna*) is mixed with salt and two to three spoons of it is given to the patient on empty stomach only. For pain in the eye as first aid, they take a piece of cloth and put it in the mouth for some time to get it warmer and apply it to the eye till the patient gets relief. For redness or burning sensation in the eyes lime juice or extract of *Curcuma longa* or leaf cotton soaked in soap-nut juice and it is inserted into the vagina. They believe this practice ensures easy labour. Another herb called *Sphaeranthus indicus*, is dried and ground to powder which is mixed in ‘Cunji’ (cooked rice water) Later it is administered orally. Yanadi folk use this plant always after delivery. Yanadi folk hand-pound the root of *Tephrosia purpuria* and prepare decoction which is orally administered to the young mother soon after the delivery. Both Yanadi and Nakkala folk usually administer the young mother orally the neem leaf juice for the womb to resume its normal size.

Irula folk grind the root of *Caesalpinia crista* with its bark and administer it in ‘Cunji’ to the woman after delivery. They say this enables the womb become cleaned the placenta easily passes from the womb and falls down after delivery. For few minutes, then the just born baby is laid on a plantain leaf smeared with castor oil. Yanadi folk make the baby lick the preparation made by grinding the dried maw of porcupine with mother’s breast milk. They believe it is.
good for the baby because that porcupine daily grazes dozens of herbs and other medicinal plants. They take the maw part of the dead animal, dry it and use it for medicinal use. The same preparation is administered to the child daily increasing the dose along with the growth of the child, for one year.

Hill tribe women know the 'grandma medicines.' It is profession to some of these women. They keep their treatment of the patients secret other wise, they fear it may effect them badly or their medicine may not act effectively. The elder women when they no longer continue the profession owing to old age confide these to the next kin or kith or at least their friends in order to continue it from becoming oblivion by their disuse. These people gather medicines from plants and herbs and use them for treatment or sell them in market. Chenchus, Koyas and Yanadis are reputed in curing arthritis and chronic wounds and gastric ulcer and the like.

Some of them tattoo themselves for various reasons like religion, beauty or culture or a cure against certain diseases. Yerukulas, Sugalis and Nakkalas are experts at puncturing holes on nose and on ear lobes for fitting ornaments like nose screws, lovelocks or ear studs. Yanadi folk make singe with fire on stomach and other affected part of the body for the cure of jaundice, internal tumours and ulcers.

For minor injuries, they treat such with ordinary clay or rub it with saliva and they leave the wound exposed to nature for cure. For major wounds Lambadies, Yanadis and Chenchus use different herbs. These people treat the wounds caused by knife or some other instrument, with banyan leaves warmed on live coals. Every hill tribe person of the forest knows the cure. For bone fractures they make use of Tamarindus indica, Cissus quadrangularis, Dodonaea extract of Cleome gynandra is instilled in the eyes. The dried fruit pulp of Solanum surattense is mixed with the husk of paddy and burnt to fine powder. This powder is mixed with extract of Acorus calamus or ginger and then administered. In the swollen liver (cirrhosis), Cuscuta plant is boiled and it is ground to fine paste and applied on the abdomen (poultice). Similarly Sugali tribe mix gum of neem (resin) with a little bit of opium and administer. They have different cures for different illnesses like cough, cold, asthma. Nakkala, Yanadi and other hill tribes use nuts of Pongamia pinnata, leaves of Datura metel, root of Solanum surattense and the like.

For sexual potency hill tribes use in food different types of natural medicinal ingredients like / snail shells, doves, sparrows known for their sex invigorating ability. Regarding herbs and other medicinal plants, there are several of them - Dichrostachys cinerea, seeds of Mucuna pruriens, Pedalium murex, Asparagus. For bad tooth, tooth aches, Yanadis and Nakkala folk apply the latex of Calotropis or Acacia nilotica bark mixed with Alum.
Delivery is an important treatment among them. They seldom go to hospital for delivery unless it becomes a hard and complicated labour. In their 'gudem' (habitation) there may be a mid-wife or quack mid-wife or sometimes neighbour women or the mother of the labouring woman acts as mid-wife. They might know the treatment after facing a delivery. Generally these women physically work hard and they have easy delivery with fewer complications. Some times one or two hard labour cases becomes out of their control they take such cases to the towns. In fact the mid-wife has little job to do except she presses abdomen of the delivering woman at the time of delivery. She goes on rubbing the abdomen with castor oil and decoction from the flowers of Calotropis procera fried with cow ghee is administered orally to the labouring woman, every half - an hour. They dilate the vagina by applying castor oil while Yanadi folk administer the decoction prepared from fruit powder of Coriandrum sativum. In the case of Nakkala folk, they administer a decoction prepared from bamboo leaves. In case of still born child, Asafoetida is pounded with common salt and mixed it with rice - washed - water or 'Cunji' and this preparation is orally administered to the labouring woman. With in half - an hour, the still-born child is hauled out manually from the mother's womb. Yerukula, Yanadi and other hill tribes hand pound the leaves of Prosopis pilulifera, garlic, millets, pepper and this preparation is administered orally to the woman. From this it is clear these aboriginal folk have their own proven herbal preparation for physically hauling out the still-born child from the womb of the labouring woman.

For easy delivery, Yanadi folk have their age old proven practice. They grind finely root of Adhatoda zeylanica and they keep the paste on the navel and around the abdomen and also in the vagina. Nakkala folk have a different process. The root of Boehmeria diffusa is ground and is mixed in castor oil or viscous, Cassia occidentalis and C auriculata and bind the affected part with bamboo sticks. In case of pus forming wounds and boils, they wash that wound first with urine or cow urine and apply medicine.

These people rinse their teeth with a twig of Azarichta indica, Pongania pinnata or root of Tephrosia purpurea or root of Achyranthes aspera or any other twig with in reach. They do not have their break - fast without rinsing their teeth. Of course, it is a healthy habit. They bathe when water is available and use oil on head once in a week. For snake bite they use magic incantations. They first singe the bitten part with a burning stick. Yanadi folk crush the root of Aristolochia indica, with the bark of Aloysium salvifolium and rhizome of Conocarpus epigaeus and administer it orally to the snake bitten victim. The hill people attribute those things which are above their comprehension to supernatural and other mysterious forces. The illness is attributed to spirits, demons and wrath of village deities Poleramma, Saramma,
Seethalamma and Gangamma whose wrath causes the spread of epidemics and punish the people. There is a kind of interdependence between man and animal and tree. So they do not kill a snake first as they believe the snakes should curse them and as a result of it they do not get children. They get skin diseases if they incur thus the wrath of Nagadevathas. Yanadis believes if any one kills a snake, pus oozes from the ears of their children. For cure they take the mud from snake pit (ant-hill) and drive the evil eye away from the affected ear by gesticulating it around the victim clock wise and anti-clock wise three times and this mud is mixed in water and few drops of it are instilled in the affected ear of the victim.

As the people worship snakes, they name their child after the snakes. In some cases, there is a practice that those who are killed by snake bite are buried separately. They worship the snake pits in which the snakes live and they venerate them. The recent incident the marriage between Baniyan and Neem trees took place on a grand scale in Trivandrum, Kerala shows how trees are venerated. They believe in the ‘Evil-Eye’. It will have bad affect upon them. So as a remedy they use Elucina coracana, salt and pepper with some hair and burn the mixture to flames.

If any epidemic like cholera breaks, they believe, it is caused by the wrath of village deities like Ammavaru, Poleramma, Gangamma, Seethalamma, Maramma. There are specific deities for specific epidemics like cholera which is caused by Maremma, plague is, by Mathamma, small pox by Mutyalamma, Nookalamma, while Mumps by Gavadalamma. Exorcist travel from one place to the other announcing they will cure such epidemics. Animal sacrifice is also practiced for relief of the victim from the ailment. They kill fowls, goats and young calves, buffaloes as sacrifice to propitiate the wrath of the deities upon their family and the village as a whole.

When an epidemic breaks, native doctors, exorcists besides giving them medicines for cure, perform pujas and enchanting mantras, prescribe the patients some type of food and these in turn make the tribal people aware of the intensity of the epidemic and they live in hygienic way as a precautionary measure, when epidemic is contained as every one tries his best every thing for the control of epidemic, is carried out on the basis of trial and error. As soon as normalcy is attained in the place, they again perform pujas to appease the village deities by killing animals and fowls as sacrifice.

Wide research into the treatment of the ailment, illness and other diseases in the hill tribes in Andhra Pradesh is imperative besides it being an urgent need. These people are still groping in the old methods without knowing the relative significance to modernity. Therefore, their lore of medicine of ages must be brought into light of modern knowledge that will make them free from shackles in the age
old methods which must be studied with relative relevance to the present needs. It is unfortunate to deprive these people (backed with much lore of forest medicine) of their home forest which is alive in their vitals and blood as well. The very thought of depriving them of their ancestral home - forest which has become part and parcel of their life shudders us let alone the feelings and sufferings of the deprived.

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HYDROPHYTES OF CHITTOOR DISTRICT IN ANDHRA PRADESH, INDIA

K. MADHAVA CHETTY, A. SUDHAKAR* & P. VENKATARAMAIAH**
Department of Botany, Sri Venkateswara University, Tirupati - 517 502
*Department of Botany, Sri Venkateswara Arts College, Tirupati - 517 502
**Department of Botany, Government Degree College, Puttur - 517 583 A.P

ABSTRACT


INTRODUCTION

In India, so far there is no detailed systematic studies available on hydrophytes. However, Haines (1925), Narayanayya (1928), Partha (1934), Biswas & Calders (1937), Misra (1946), Lakshman (1950), Mirashi (1954, 1957), Patnaik & Patnaik (1956), Subramanyam (1962), Kaul & Zutshi (1967), Rao (1969), Brezny & Mehta (1970), Jain (1975), Thomas (1976), Gupta (1979) etc., have contributed some work on hydrophytic flora of different parts of India.

Chittoor district lie between 12°13' to 14°05' North latitude and 78°05' to 80°08' East longitude and is the Southernmost region of Andhra Pradesh. The total geographical area is 15,152 Km². The elevation varies from 50 m to 750 m above mean sea level (MSL). Major part of the district is covered by red loamy and red sandy soils. The climate is essentially semi-arid but the eastern part of the district receives relatively more rainfall than the western part. The average yearly rainfall is 560 mm, but the hilly places like Tirumala and Horsley hills receive 1160 mm. The maximum and minimum temperatures of the district are from 42°C to 17°C and the relative humidity is about 70-80% (Fig. 1).

No contribution has appeared so far dealing with the hydrophytes of the district. However, Rao & Rao (1969), Swamy & Thammanna (1985), Thammanna et al. (1994) have studied the flora of some areas in the district. Hence the present work has been undertaken to lay special interest on the occurrence of hydrophytes of the district.

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Fig. 1. Surveyed region: Chittoor district, Andhra Pradesh, India
HABITATS

The general habitats of the hydrophytes in this district are a number of tanks, lakes, reservoirs, streams, rivers, water falls, ponds, ditches, puddles, rice fields and marshy and fallow fields etc. These generally include plants of various conditions like true aquatics, free floating, submerged or emerged ones. The localities were frequently visited by authors in different seasons since 1993 to 1996.

TAXONOMIC DATA

The aquatic and marsh vegetation of Chittoor district comprises rich and varied assemblage of vascular hydrophytes (Pteridophytes and Angiosperms) besides a large number of algal and bryophytic forms. The following taxonomic data and locality could be given for the hydrophytic flora.

ALGAE

Nostocaceae

Anabaena sp.
Rice fields in several parts of the district.

Nostoc muscorum Agardh
Rice fields

Oscillatoriaceae

Oscillatoria sp.
Stagnant polluted water at Renigunta.

Rivulariaceae

Rivularia princeps L.
Fresh water pools.

Volvocaceae

Volvox globator L
Temporary ponds at Nagalapuram.

Ulothrichaceae

Ulothrix zonata (Webet Mohr) Kuetz
Fresh flowing water at Talakona & Bhakrapeta

Oedogoniaceae

Oedogonium nodulosum Link
Polluted water near Renigunta.

Cladophoraceae

Cladophora fracta (Dill.) Kuetz
Irrigated canals & slow running water

Pithophora sp.
Slow running water near Mamandu

Chaetophoraceae

Dramparndiposis sp
On Hydro1lota plant at Chandragiri fort

Trentepohliaceae

Trentepohlia sp.
Moist places of Tirumala.

Coleochaetaeaceae

Coleochaete scutata Breb.
On Nymphaea & Hydrilla plants at Chandragiri fort.

Zyg nemaceae

Zyg nema sp.
A pool at Rayalacheruvu.

Spirogyra condensata (Vaucher.) Kutz.
Fresh water ponds & ditches.

Desmidaceae

Closterium, Cosmarium and Desmidium sps.
Drains and ponds in some areas of the district.

Characeae

Chara vandalurensis Sund.
Rayalacheruvu tank and Sathyavedu.
Chett, Sudhakar & Venkataramanaiah

C. nud^n Pol.
   Chandragiri fort pond
C. brah hypus Braun.
   Chandragiri fort pond.
C. brahnu Gmelin
   Chandragiri fort pond.
C. gymnopitys Br.
   Nagalapuram & Alwar tank at Tirumala

Nutella funeata (Roxb.) Agardh
   Kailasakona.
N. pseudoflabellata Braun.
   Pool at Chandragiri
N. hyalina (DC ) Agardh
   Pool at Annegarlapalli & Kalahasti.
N. watti Groves
   Nagalapuram.
N. oligospora Br
   Renigunta

BRYOPHYTA

Pallavaciniaceae

Pallavacenia sp.
   Tirumala

Riccardiaceae

Riccardia lewleri Schiffn.
   Talakona and Kailasakona water falls.

Marchantiaceae

Stephinsoniella brevistigma Kesh.
   Kailasakona water falls.

Rebouliaeae

Reboulia hemisphaerica (L.) Reddi
   Talakona water falls.

Ricciaceae

Riccia crystallina L.
   Chandragiri hills.

Anthocerataeae

Anthoceros sp.
   On the way to Tumburutheertham (Tirumala).

PTERIDOPHYTA

Lycopodiaceae

Lycopodium cernuum L.
   Kailasakona and near water tank at Microwave station (Tirumala)

Selaginellaceae

Selaginella plumosa Baker
   Talakona water falls area, Tumburutheertham, Akashaganga (Tirumala) and Sadasivakona.

S. rupestris Spr.
   Chandragiri hills.

S. bisculata Griffith
   Valleys of Tirumala, Talakona and Kailasakona.

S. chrysocalos (Hk. et Grev.) Spring
   Trumala, Palamaner and Picchatur.

Isoetaceae

Isoetes indica Pant & Srivastava et al
   Chandragiri fort pond edges and also hill top ponds.

Psilotaceae

Psilotum nudum L.
   Tirumala.

Ophioglossaceae

Ophioglossum reticulatum L.
   Chandragiri hill top water ponds.

O. costatum R. Br.
Chandragiri hill top water ponds
O. nudicaulis L.f.
Microwave Station (Tirumala), Gulur and Chandragiri.

**Angiopteridaceae**
Angiopteris evecta (Forst.) Hoffm.
Kailasakona.

**Gleicheniaceae**
Dicranopteris linearis L.
Papavinasam and Tumburuteertham at Tirumala.

**Polypodiaceae**
Microsorium scolopendrium (Burm.f.) Cop.
Near stream at Dumukuralla and Papavinasam in Tirumala.

**Lygodiaceae**
Lygodium flexuosum (L.) Sw.
Kailasakona, Tirumala Ramakrishna theertham, Tumburu theertham and Japali theertham.
L. microphylla (L.) Sw.
Japali theertham at Tirumala and Sadasivakona.

**Actiniopteridaceae**
Actiniopteris australis (L. f.) Link
Moist rocky crevices at Kasipental, Chandragiri, Tirumala, Bhimavaram and Kuppam.

**Pteridaceae**
Pellaea concolor Langs. et Fisch.
Tirumala and Nagalapuram.
Pteris quadridaurita L.
Talakona, Tirumala and Kailasakona.
P. tripartita Sud.
Sadasivakona, Kailasakona and Tirumala.
P. pallucens Agardh
Tirumala, Palamaner and Rayalacheruvu.
Schizoloma ensifolium Sw.
Talakona, Kuppam and Tirumala.

**Parkeriaceae**
Ceratopteris thalictroides (L.) Brongn.
Talakona, SBR Puram, Chandragiri and Bhimavaram.

**Dryopteridaceae**
Dryopteris cochleata (Don) C. Chr.
Tirumala, Palamaner and Sadasivakona.

D otaria (Kze.) O. Ktze
Kailasakona.

D. wallichiana (Spreng.) Hyl.
Tirumala and Mogili.

**Adiantaceae**
Adiantum caudatum L
Kailasakona, Chandragiri hills, Panapakam, Tirumala and Irala.
Aleuropteris farinosa (Forsk,) Fee.
Srivarimettu, Tirumala and Dumukuralla.

**Marsileaceae**
Marsilea quadrifolia L.
Almost all places like shallow water and marshy areas.
M. minuta L.
Slightly less moist areas.

**Nephrolepidaceae**
Nephrolepis cordifolia (HBK.) Presl.
Kailasakona and Tirumala.

**Blechnaceae**
Blechnum orientale L.
Tirumala and Talakona.

**Azollaceae**
Azolla filiculoides L.
Chetty, Sudhakar & Venkataramaiah

Rice fields, Gulur reservoir and Tirumala

**ANGIOSPERMS**

**DICOTYLEDONS**

Nelumbonaceae

*Nelumbo nucifera* Gaertn.

Ponds & tanks of Tirumala, Chandragiri and Tirupati surrounding areas.

Nymphaeaceae

*Nymphaea nouchali* Burm. f.

*N. pubescens* Wild

Pond at Chandragiri fort, Mutinayani tank at Tirumala and K.V.B. Puram

Elatinaceae

*Bergia ammanniioides* Roxb.

Paddy fields, river beds and wet places of almost throughout the district.

*B. capensis* L

Paddy fields, irrigation canals near Chandragiri.

Hypericaceae

*Hypericum japonicum* Thunb. ex Murr.

Tirumala and Chelluru reservoirs.

Fabaceae

*Aeschynomene aspera* L.

SV University and Nerabailu

*A. indica* L.

Bhakarapet and fallow field at Thummalagunta.

Mimosaceae

*Neptuniaoleracea* Lour.

Chandragiri fort pond and Alwar tank at Tirumala

**Droseraceae**

*Drosera burmannii* Vahl

Stream beds on the way to microwave station and Gogarbandam area in Tirumala

*Haloragaceae*

*Myriophyllum oliganthum* (Wt. et Arn.) Muell

Alwar tank & Japali theertham in Tirumala and Kalyani dam.

Lythraceae

*Ammannia baccifera* L.

Paddy fields, river beds at different places of the district

*Nesaea brevipes* Koehne.

Ponds at Tirumala.

*Rotala pentandra* (Roxb.) Blatt. & Hallb.

Tirumala & Talakona.

*R. verticillaris* L.

Fallow fields and pond margins at Tirumala microwave station.

Onagraceae

*Ludwigia adscendens* (L.) Harv

Temporary pond at S.V. University

*L. hyssopfolia* (G. Don) Exell.

Kambakkam and Bhakara Peta

*L. perennis* L.

Kambakkam, Chandragiri and Tirumala.

**Apiaceae**

*Centella asiatica* (L.) Urb.

Canal sides in the fields of many areas of the district

**Asteraceae**

*Eclipta prostrata* (L.) L.

Stream puddle margins and moist places in fields.
Menyanthaceae
*Nymphoides hydrophilla* (Lour.) Kuntz
Tirumala and Bhakarapeta.
*N. indica* (L.) Kuntz.
Tirumala, Srikalahiti and Guluru

Hydrophyllaceae
*Hydrocalla zeylanica* (L.) Vahl
Temporary ponds at S.V. University and Naraganagiri garden at Tirumala.

Convulvulaceae
*Ipomoea aquatica* Forsk.
Nerabailu and Peechatur.
*L. carnea* Jacq.
The most common gregariously growing plant in almost all the ponds of the district.

Scrophulariaceae
*Bacopa monnieri* (L.) Pennel
Puddles & stream beds of almost all places of the district

Dopatrium juncem (Roxb.) Buch.-Ham. ex Benth.
Wet places at Tirumala and Yerravaripalem

*Limnophila chinensis* (Osbeck.) Merr.
*L. indica* (L.) Druce
Chadumu and Somala and Ponds at Japali Theertham (Tirumala).

*L. repens* (Benth.) Benth.
Bhakarapeta.

*Lindernia antipoda* (L.) Alston
Fallow fields & moist places in Chandragiri.

*L. crustacea* (L.) Muell.
Sadasivakona.

*L. hyssopioides* (L.) Haines

Wet places of cultivated lands

*Stemodia viscosa* Roxb.
Tirumala hills

Lentibulariaceae
*Utricularia nitida* L.
Wet places at Tirumala

*U. caerulea* L.
Moist rocky places at Tirumala.

*U. exoleta* R. Br.
Kalyanidam, ponds of Chandragiri and Tirumala.

*U. polygaloides* Edgew.
Kailasakona and Bakrapeta.

*U. scandens* Benj.
Moist places on rocks at Tirumala and Kailasakona.

*U. striatula* J.E. Smith
On rocky surfaces of Talakona water falls.

Acanthaceae
*Hygrophila salicifolia* (Vahl) Nees
Stream beds at Chelluru reservoir, Dharmagiri tank at Tirumala.

*H. schulli* (Hamilt.) Almeida & Almeida
Vikrutamala, Bhakrapet, Somala, Nagiri, Nagalapauram and Satyavedu.

Verbenaceae
*Phyla nodiflora* (L.) Greene
Margins of cultivated fields throughout the district.

Amaranthaceae
*Alternanthera sessilis* (L.) R. Br.
Pond’s edges at S.V. University campus.

Polygonaceae
*Polygonum glabrum* Willd.
Water-logged areas at Tirumala & Punganur

*P. plebæum* R Br

Cultivated fields of Yerravaripalem, Chandragiri and V. Kota and B. Kota.

**Ceratophyllaceae**

*Ceratophyllum demersum* L.

Ponds & tanks at Tirumala.

**Hydrocharitaceae**

*Blyxa octandra* (Roxb.) Planch. ex Thw.

Ponds at Parvetimandapam, Kotlapalli at Talakona and Palamaneru.

*Hydrilla verticillata* (L.f.) Royle

Ponds at Tirumala, Aragonda, Kuppam and Vayalpadu.

*Lagerosiphon alternifolius* Druce

Kuppam.

*Ottelia alismoides* (L.) Pers.

Pond at Kotlapalli (Talakona), Chandragiri and Tirumala.

*Vallisneria natans* (Lour.) Hara

Pond at Japali theertham (Tirumala).

**Pontederiaceae**

*Eichhornia crassipes* (Mart.) Solms.

Ponds & ditches of Tirupati and Srikalahasti.

*Monochoria vaginalis* (Burm.f.) Presl

Wet places at Bhakarapet and Srikalahasti.

**Xyridaceae**

*Xyris pauciflora* Wild.

Marshy places in Dharmagiri tank and Chandragiri fort pond.

**Commelinaceae**

*Commelina benghalensis* L.

Most common in almost all the moist places of cultivated lands in the district.

**Typhaceae**

*Typha angustata* Bory & Chaub.

Temporary pond at S.V. University, Nerabailu and Kalyanidam.

**Araceae**

*Acorus calamus* L.

Cultivated as a medicinal plant in most of the marshy localities of villages (especially in puddles).

*Colocasia esculenta* (L.) Schott

Canal sides near cultivated lands.

*Pistia stratiotes* L.

Common in ponds at Nerabailu, Chandragiri, Irala and Aragonda.

**Lemnaceae**

*Lemma perpusilla* Torrey

Most Common in almost all the ponds of district.

*Wolffia globosa* (Roxb.) Hart. & Plas

Ponds at Kalyanidam, Tirupati, Chandragiri and Vayalpadu.

**Alismataceae**

*Lymnophyton obtusifolium* (L.) Miq.

Edges of tanks and ponds near Yerravaripalem, Chadumu and Palamaner.

**Najadaceae**

*Najas minor* All.

Alwar tank at Tirumala.

**Aponogetonaceae**

*Aponogeton natans* (L.) Eng. & Krau.

Muthinayani tank at Tirumala and Kotlapalli at Talakona.
Potamogetonaceae

Potamogeton nodosus Poir.
Ponds and tanks at Tirumala, Chelluru and Papanaidupeta.

Eriocaulaceae

Eriocaulon cinereum R. Br.
Kalyanidam area and Muthinayuni tank at Tirumala.
E. quinquangularare L.
Wet localities of Dharmagiri in Tirumala and Horsley hills.
E. truncatum Buch.-Ham.
Marshy area of Microwave station at Tirumala and Kailasakona.

Cyperaceae

Cyperus haspan L.
Streams at Talakona.
C. polystachyos Rottb.
Thumburu theertham at Tirumala.
C. compressus L.
Ramakrishna theertham and Krishna theertham in Tirumala.
C. articulatus L.
Rayalacheruvu streams.
C. corymbosus Rottb.
Common weed in almost all moist places of the district.
C. distans L.f.
Streams at Talakona.
Scirpus articulatus L.
Pond edges at Japali-theertham (Tirumala).
Scleria lithosperma (L.) Sw.
Ponds edges at Krishna theertham and Kumaradara theertham in Tirumala.

Poaceae

Hygrorhiza aristata Nees
Moist places at cultivated plants.

Paspalum scrobiculatum L.
Common in rice fields.

Paspalidium flavidum (Retz.) Camus
Common in rice fields.

DISCUSSION

The present study revealed that the floristic composition of the hydrophytes of Chittoor district shows that the aquatic and marsh plants of the locality includes a large number of angiosperms, besides a few algal, bryophytic and pteridophytic forms. They include both primitive (e.g. Nelumbonaceae, Nymphaeaceae, Alismataceae) as well as advanced families (e.g. Asteraceae and Poaceae) of the dicots and monocots.

The given taxonomic data shows the relative range of distribution of the various plant species. Several taxa show a restricted distribution, being confined to one or two habitats only. For example, Chara nuda, C. brachypus, C. braunii, Isoetes indica, Ophioglossum reticulatum and O. costatum are distributed only in Chandragiri hills.

Large number of species like Marsilea, Nelumbo, Bergia animanniodes, Anmanna, Centella, Eclipta, Ipomoea carnea, Bacopa, Hygrophila schulli, Phyla, Commelina, Lemna, Cyperus corymbosus, Paspalum etc. are very widely distributed. The occurrence of Isoetes indica which is known to grow in soils poor in mineral salts and of the nitrophilous species like Neptunia, Eichhornia and Ipomoea aquatica occur in several puddles and ponds at different places of the district. Insectivorous plants like Drosera, Utricularia nitida, U. caerulea are restricted to Tirumala, whereas the other
species *U. striatula* occur near Talakona water falls.

When compare to all the places of surveyed area, Tirumala, Talakona and Chandragiri are the main sources of occurrence of aquatic flora.

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