Ethnomedicinal Recipes for Respiratory and Bronchial diseases from Tribals of Sriharikota Island, Andhra Pradesh

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ABSTRACT

Sriharikota Island in Andhra Pradesh is an elliptical land mass sandwiched between Bay of Bengal in the East and Pulicat lake in the West. Sullurpet is the nearest railway station, which is 18 Km from Sriharikota Island and it is on Chennai –Kolkata trunk line and 90 Km away from North of Chennai. An aboriginal tribe called Yanadi dwells in Sriharikota. It is similar to Chenchu community elsewhere in Andhra Pradesh. Inspite of the community being drifted from their natural way of life due to agro-rural development activities, a few aged tribals are still able to furnish traditional ethnomedicinal data. So far no ethno medico-botanical studies are conducted in this area except for list of 50 plants reported for general ailments/ diseases by Suryanarayana et.al (1989). Therefore a detailed study on ethno medico-botanical uses of the tribals of Sriharikota Island was undertaken for the duration three years (1996-1999). During this work about 280 species are collected having a variety of ethno medico-botanical/pharmaceutical values. However the article presents the 20 plant species only having remedial effect for respiratory and bronchial diseases. The study analyzes the habit and plant part (s) used for ethnomedicinal practices by the tribals of Sriharikota Island.

Introduction

An aboriginal tribe called ‘Yanadi’dwells in Sriharikota. It is similar Chenchu community elsewhere in Andhra Pradesh. Inspite of the community being drifted from the natural way of life due to agro-rural development activities a few aged tribal men are still able to furnish traditional ethno medico-botanical data. In Sriharikota Island about tribal families are living in 3 colonies viz. Penubakam, Kothachenu and Chengalpalem.

Topography

Sriharikota Island is geographically located at 80° 21’’ E and 13°22’’ N to 14° N. it is a spindle shaped landmass sandwiched between Bay of Bengal on the East and Pulicat Lake on the West. It is 18 km East of Sullurpet. The nearest railway station located on Chennai-Kolkata trunk line. Chennai is 98 km away from Sriharikota.

Materials and Methods

An intensive medico-ethnobotanical survey of Sriharikota Island was undertaken for the duration three years (1996-1999). Regular periodical fieldwork is conducted covering all the seasons so as not to miss seasonal elements having pharmaceutical value and collected a large number of specimens in their respective phenological
stages. Ample field notes recorded pertaining to frequency, abundance, edaphic and morphological characters, which cannot be deducted from exsiccata. Local tribal men are contacted to record data related to ethno medico-botanical uses, drug preparation and mode of administration etc. After identification, samples are properly processed, mounted on herbarium sheets and deposited in Visodaya Govt. College Herbarium (VGCH) and a duplicate set at SHAR Herbarium, Sriharikota.
### Medicinal Plant Species - Used By Tribal for Respiratory and Bronchial Diseases

<table>
<thead>
<tr>
<th>Plant Species</th>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Centella asiatica</em> (L.) Urban</td>
<td>= <em>Hydrocotyle asiatica</em> L.</td>
<td></td>
</tr>
<tr>
<td><em>Hyptis suaveolens</em> (L.) Poit.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Justicia adhatoda</em> L.</td>
<td>= <em>Adhatoda vasica</em> Nees.</td>
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</tbody>
</table>
### Results and Discussion

During these studies a good number of ethnomedicinal plants were collected. However, in this paper, 20 species having remedial effect on respiratory and bronchitis and diseases are enumerated. Latest Scientific name followed by relevant synonyms if any, local name, habit flowering & fruiting season and ethnomedicinal data are furnished for each species. Their other medicinal uses adopted in the Island and elsewhere are given in the Appendix.
Enumeration:

**Atalantia monophylla** (Roxb.) DC. (RUTACEAE)

Ln: Munkudu, Adavinimma.

Thorny shrubs or small trees.


Fresh roots cleaned, dried and cut into small pieces. Root pieces mixed with black pepper and decoction is prepared 10-15 ml decoction is given orally twice a day to get relief from cough with phlegm. (Antitussive)

**Cassine glauca** (Rottb.) Kuntze. (CELASTRACEAE)

= **Eleodendron glaucum** (Vahl.) Pers.

Ln: Neridi, Nerini.

An evergreen tree, densely foliaceous.


50g of fresh leaves taken in 200 ml of water with 1 spoonful of turmeric powder, boiled to prepare decoction. 5-10 ml of decoction is taken orally twice a day to get relief from cough with phlegm, for about a fortnight. (Bechic)

**Centella asiatica** (L.) Urban. (APIACEAE)

= **Hydrocotyle asiatica** L.

Ln: Saraswathi aku, Valluriaku. Sn: Manduka parni.

Pretty herbs, stems creeping, rooted at nodes.

Occasional in the island, trailing in moist places often forming mats. F1: October-November. Ld: Keepakam. RBK 9911.

100g of dried leaves taken and pounded into powder. 1-2 spoonfuls of powder taken orally twice a day for 20-25 days to get relief from cold, cough. This treatment is also taken for asthma for 35-40 days to get relief from asthma. (Antiasthmatic)

**Dichrostachys cineraea** (L.) Wight & Arn. (MIMOSACEAE)


Shrubs or small trees, branchlets modified into thorns.


100g of fresh leaves ground to paste and applied on head throughly twice a day for 5 - 7 days. After 1 hour of application head bath is taken with warm water. Relief from cough and phlegm will be effective. (Bechic)

**Evolvulus alsinoides** (L.) L. (CONVOLVULACEAE)

Ln: Vishnukrantham. Sn: Vishnugandhi.

Appressed hairy, prostrate herbs.

100g fresh plant material squeezed and obtained juice. 10 ml of juice given orally 2-3 times a day for 3-4 days to get relief from fever with cold.

*Geniosporum tenuiflorum* (L.) Merr. (LAMIACEAE)

Ln: Bhootulasi

Prostrate herbs, branches many, hispid, radiating from a woody root stock.


100g of fresh leaves squeezed and obtained juice. 10-15 ml of juice taken orally twice in a day for 30-40 days to get relief from asthma. (Antiasthmatic, Bechic)

*Hybanthus enneaspermus* (L.) F.v.Muell. (VIOLACEAE)

Ln: Dagguchettu. Sn: Ratnapurusha.

Herbs. Leaves elliptic, entire or minutely toothed.


Fresh leaves powdered and mixed with one teaspoonful turmeric powder. 5g of the mixture is taken orally twice a day to get relief from cough. It is continued for 3-4 days to get good relief from cough. (Bechic)

*Hyptis suaveolens* (L.) Poit. (LAMIACEAE)

Ln: Konda tulasi.

An erect aromatic undershrub, stems tetragonal, leaves cordate, denticulate, acute.


100g of leaves ground to paste mixed with 1 spoonful of turmeric powder. It is warmed and applied on head thoroughly wait for an hour and take head bath with warm water. It is repeated for 3-4 days to get relief from cold with cough. (Bechic)

*Justicia adhatoda* L. (ACANTHACEAE)

Ln: Addasaram, Sn: Vasaka.

An erect shrub.


Leaves as 100g of fresh leaves taken and made into paste, it is mixed with 1tsp turmeric powder taken orally
twice in a day for 30 days to get relief from cough, asthma. (Antiasthmatic)

**Leptadenia reticulata** (Retz.) Wight & Arn. (ASCLEPIADACEAE)

Ln: Mukkupala, Mukkutummuduteega.

Twining herbs, latex watery.
Common on hedges or trailing on ground. Fl. & Fr.: April- December. Ld: Beripeta: RBK 964.
Fresh twigs crushed and obtained sap; 10-15 ml sap taken orally twice a day for 1 week to get relief from cold with phlegm. (Bechic)

**Leucas aspera** (Willd.) Link. (LAMIACEAE)

Ln: Tummi. Sn: Drona pushpi.

A diffusely, branched, annual herb; stems hispid.
50g of leaves squeezed and obtained juice. 2-3 drops of juice dropped into nostrils to get relief from heavy cold. This treatment is continued at regular intervals to get relief from cold.

**Ocimum americanum** L. = *O. canum* Sims (LAMIACEAE)

Ln: Kukka tulasi. Sn: Ajaka, gambhira, kuthera.

Erect, annual, aromatic herbs puberulous.
100g of fresh leaves taken squeezed and obtained juice. It is mixed with 1 spoonful of turmeric powder. 10 ml of juice taken orally 2-3 times a day for 4-5 days to get relief from cough. (Bechic)

**Ocimum tenuiflorum** L. = *O. sanctum* L. (LAMIACEAE)

Ln: Tulasi, Manchitulasi. Sn: Ajaka, brinda, manjari, patra pushpa.

Erect aromatic herbs, branches hispid.
Usually cultivated as a sacred plant and also found as weed in fields and waste places. Fl & Fr: Throughout the year. Ld: Malavalamvagu: RBK 9772.
Leaf juice as 100g of fresh leaves squeezed, juice obtained is mixed with 1 spoonful of turmeric powder. 10 ml of juice is given orally twice a day for 30-40 days to get relief from asthma. (Antiasthmatic)

**Pavonia zeylanica** (L.) Cav. (MALVACEAE)

Ln: Chirubenda.

Erect viscid herbs. Leaves entire or lobed.

50g of fresh leaves taken in 250 ml of water boiled and prepared decoction. 5-10 ml decoction taken orally twice a day for 4-5 days to get relief from cough with phlegm. (Bechic)

**Pergularia daemia** (Forssk.) Chiov. (ASCLEPIADACEAE)

= *Pergularia extensa* (Jacq.) N.E.

Ln: Juttipala, Juttepaku, Dustaputeega. Sn: Phala katanka, Yugma thalika.

An extensive twining herb, latex milky.


100g of fresh leaves cut into small pieces crushed and obtained juice. 10 ml of juice taken orally with 1 spoonful of turmeric powder along 50 ml warm water twice a day for 3-4 days to get remedy from cold.

**Pongamia pinnata** (L.) Pierre. (FABACEAE)

= *Pongamia glabra* Vent.


Trees.


Fresh dried fruits are dipped in turmeric water, made them into garland. It is tied around the neck of a child suffering from whooping cough for relief.

**Sapindus emarginatus** Vahl. (SAPINDACEAE)

Ln: Kunkudu. Sn: Arishta.

Deciduous trees.


100g of fresh leaves are ground to fine paste. It is slightly warmed and gently applied on temples and forehead for relief from heavy cold. Recipe is continued once a day for 4-5 days to get complete relief from heavy cold.

**Sarcostemma acidum** (Roxb.) Voigt. (ASCLEPIADACEAE)

= *Sarcostemma brevistigma* Wight & Arn.


A straggling leafless shrub, stems succulent jointed latex milky.


200g of fresh stem bits ground and obtained juice. 10-15 ml of juice slightly warmed administered orally to children for 4-5 days to get relief from cold.

**Sida cordata** (Burm.f.) Borssum. (MALVACEAE)

= *Sida veronicifolia* Lam.
Ln: Bala, Kakkuvaidaggu chettu.

A wiry ascending woody herb, branchlets hispid.

Common ascending in the under growth among bushes or trailing on waste places. F1. & Fr.: October-November. Ld: Chengalpalem: RBK 9232.

50g of fresh leaves and 1 spoonful of turmeric powder ground and made into pills of groundnut seed size. 2-3 pills twice a day taken with 1 glass of milk. Recipe is continued for 5-7 days to get remedy from whooping cough. (Antitussive)

*Tinospora cordifolia* (Willd.) Miers. ex. HK.f. & Thoms. (MENISPERMACEAE)


An elaborate climber with succulent stem with papery bark.


Fresh roots taken and cleaned. Root pieces ground and obtained sap. 5-10 ml of sap 3 times a day given to children to get good relief from cough with phlegm. (Bechic)

*Tylophora indica* (Burm.f.) Merr. (ASCLEPIADACEAE)

= *T. asthamatica* (L.f.) Wight. & Arn.

Ln: Kukkapala, Sn: Ajadvishta.

A much branched climbing shrub, branchlets pubescent, latex milky.

Common on bushes and hedges also spreading on ground. F1. & Fr.: March-September. Ld: Ellanthugunta: RBK 9013.

100g of leaves and roots made into small pieces and ground to paste. 1-2 spoonfuls of paste taken orally with 10-15 ml of milk twice a day, for 30-40 days to get relief from asthma and other bronchial complaints. (Antiasthmatic)

**Conclusion**

A critical study of 20 plant species having respiratory and antiasthmatic properties collected from the tribals of Sriharikota Island, revealed that most of them are also employed in their traditional medicine to prevent and cure various ailments without having any side and adverse effect on body system. Considering the immense ethnomedicinal uses of tribal medicinal species, the study highlights the importance of their conservation, cultivation and proper utilization for the society.

**Acknowledgements**

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<table>
<thead>
<tr>
<th>S.No.</th>
<th>Scientific Name and Family</th>
<th>Local Name(s)</th>
<th>Other uses</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Island</td>
</tr>
<tr>
<td>1.</td>
<td><em>Atalantia monophylla</em></td>
<td>Munkudu,</td>
<td>Seed oil</td>
</tr>
<tr>
<td></td>
<td>RUTACEAE</td>
<td>Adavinimma.</td>
<td>antiarthritic and rheumatism</td>
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<tr>
<td>2.</td>
<td><em>Cassine glauca</em> = <em>Eleodendron glaucum</em></td>
<td>Neridi, Nerini.</td>
<td>Wood used in making cots - used for to avoid evil spirits and bad dreams</td>
</tr>
<tr>
<td></td>
<td>CELASTRACEAE</td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td><em>Centella asiatica</em> = <em>Hydrocotyle asiatica</em></td>
<td>Saraswathi aku, Valluriaku.</td>
<td>Leaf juice taken orally for nerve pains, it is also taken for 40-60 days to improve memory power.</td>
</tr>
<tr>
<td></td>
<td>APIACEAE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td><em>Dichrostachys cinerea</em></td>
<td>Veluturu chettu.</td>
<td>Leaf paste administered for emmenogogue Fruit decoction for family planning.</td>
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<tr>
<td></td>
<td>MIMOSACEAE</td>
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<tr>
<td>5.</td>
<td><em>Evolvulus alsinoides</em></td>
<td>Vishnukrantham/ Vishnugandhi.</td>
<td>Leaf paste vulnerary agent. It is applied on wounds and cuts.</td>
</tr>
<tr>
<td></td>
<td>CONVOLVULACEAE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td><em>Geniosporum tenuiflorum</em> = <em>Geniosporum prostratum</em></td>
<td>Bhutulasí</td>
<td>Leaf decoction taken orally to get relief from fevers.</td>
</tr>
<tr>
<td></td>
<td>LAMIACEAE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td><em>Hybanthus enneaspermus</em> = <em>Ionidium suffruticosum</em></td>
<td>Dagguchettu.</td>
<td>Leaf powder is mixed with honey taken orally as Tonic.</td>
</tr>
<tr>
<td></td>
<td>VIOLACEAE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td><em>Hyptis suaveolens</em></td>
<td>Konda tulasi.</td>
<td>Leaf juice administered for to get relief from fevers.</td>
</tr>
<tr>
<td></td>
<td>LAMIACEAE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td><em>Leptadenia reticulata</em></td>
<td>Mukkupala teega</td>
<td>Leaf paste with butter milk taken orally for</td>
</tr>
<tr>
<td></td>
<td>ASCLEPIADACEAE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 10. *Leucas aspera* (LAMIACEAE)
- **Local Name**: Tummi
- **Other Uses**: Leaves used in curry preparations. Leaf decoction administered for body pains. Whole plant extract is used for cough and cold.

### 11. *Ocimum americanum* = *O. canum* (LAMIACEAE)
- **Local Name**: Kukka tulasi
- **Other Uses**: Leaf smoke as mosquito repellent. Leaf decoction used for cough, dysentery and mouth wash (toothache).

### 12. *Ocimum tenuiflorum* = *O. sanctum* (LAMIACEAE)
- **Local Name**: Tulasi, Manchitulasi
- **Other Uses**: Plant is considered sacred and worshiped. Leaf juice catarrh, dyspepsia and skin diseases.

### APPENDIX: Other Medicinal Uses for Plants of Respiratory and Antiasthmatic Properties Reported First Time from Sriharikota

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Scientific Name and Family</th>
<th>Local Name(s)</th>
<th>Other uses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In Island</strong></td>
<td></td>
<td></td>
<td>*Elsewhere*</td>
</tr>
<tr>
<td>13.</td>
<td><em>Pergularia daemia</em> = <em>Pergularia extensa</em> (ASCLEPIADACEAE)</td>
<td>Juttipala, Dustaputeega</td>
<td>Fresh leaf juice with lime stone (Caco$_3$) water, slightly warmed and applied for body pains.</td>
</tr>
<tr>
<td>14.</td>
<td><em>Pongamia pinnata</em> = <em>Pongamia glabra</em> (FABACEAE)</td>
<td>Kanuga</td>
<td>Fresh stem bark used for fish poison. Wood used for making chappals are used by tribals to get relief from scrapes of feet.</td>
</tr>
<tr>
<td>15.</td>
<td><em>Sapindus emarginatus</em> (SAPINDACEAE)</td>
<td>Kunkudu</td>
<td>Seed kernel is edible. Leaf sap used as a medicine to prevent eye diseases.</td>
</tr>
<tr>
<td>No.</td>
<td>Scientific Name</td>
<td>Common Name</td>
<td>Uses</td>
</tr>
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</tbody>
</table>
| 16. | *Sarcostemma acidum*  
= *Sarcostemma brevistigma* | Pullakadalu, Jemudukadalu | Latex dropped into eyes in case of early stages of catarrhact. (Suklamu). | ASCLEPIADACEAE |
| 17. | *Tinospora cordifolia* | Kotari teega, Tippa teega | Fresh and clean warmed leaves applied on painful swellings. (Analgesic) | MENISPERMACEAE |
| 18. | *Tylophora indica*  
= *T. asthamatica* | Kukkapala | Root acts as snake repellent. | ASCLEPIADACEAE |

**References**


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