

Full Length Research Paper

Traditional medicinal plants in Seshachalam hills, Andhra Pradesh, India

C. Sudhakar Reddy^{1*}, K. N. Reddy², E. N. Murthy³ and V. S. Raju³

¹Forestry and Ecology Division, National Remote Sensing Agency, Balanagar, Hyderabad-500 037, India.

²Laila Impex, R and D Centre, Unit-1, Phase-3, Jawahar Autonagar, Vijayawada-520 007, India.

³Department of Botany, Kakatiya University, Warangal, Andhra Pradesh-506 009, India.

Accepted 13 May, 2009

The present study documents the traditional knowledge of medicinal plants that are in use in Seshachalam hill ranges in Cuddapah district, Andhra Pradesh, India. Ethnomedicinal uses of 48 plant species along with botanical name, vernacular name, family and mode of administration are presented. They belong to 44 genera and 30 families. These plants used to cure 32 types of ailments. Most remedies were taken orally, accounting for 78% of medicinal use. Most of the remedies were reported to have been from trees and climber species. The most widely sought after plant parts in the preparation of remedies in the study area are the leaves and root. High number of medicinal plant species available for the treatment of skin diseases and indigestion. The study emphasizes the potentials of the ethnobotanical research and the need for the documentation of traditional knowledge pertaining to the medicinal plant utilization for the greater benefit of mankind.

Key words: Ethnomedicine, medicinal plants, Yanadis, Seshachalam, eastern Ghats.

INTRODUCTION

Plants are the basis of life on earth and are central to people's livelihoods. India is well known for significant geographical diversity which has favoured the formation of different habitats and vegetation types. Indian subcontinent is being inhabited by over 53.8 million tribal people, representing one of the greatest emporia of ethno-botanical wealth (Sajem and Gosai, 2006). Traditional healing systems play an important role in maintaining the physical and psychological wellbeing of the vast majority of tribal people in India. Today continued deforestation and environmental degradation in many parts of India brought about depletion of medicinal plants and associated knowledge.

The need for the integration of local indigenous knowledge for a sustainable management and conservation of natural resources receives more and more recognition (Posey, 1992). Moreover, an increased emphasis is being placed on possible economic benefits especially of the medicinal use of tropical forest products instead of pure timber harvesting (Pimbert and Pretty, 1995).

Study area

The Seshachalam hill ranges are distributed in parts of Cuddapah and Chittoor districts of Andhra Pradesh, India. These hill ranges were very prominent in Cuddapah district, covering the area under 13°43' to 13°55'N latitudes and 79°08' to 79°24'E longitudes. The predominant vegetation type is tropical southern dry mixed deciduous forest (Champion and Seth, 1968). It is a valuable red Sanders (*Pterocarpus santalinus*) area.

Yanadis are aboriginals mainly inhabiting the Cuddapah, Chittoor, Nellore and Prakasham districts of Andhra Pradesh. The Yanadi population according to 1981 census report is 315, 344. Yanadis constitute 9.92% to the total tribal population of state. The Yanadis are characterized by dark skin, short stature, platyrrhine nose, long head, prominent chin, thick lips and scanty hairs on both head and body. It is believed that Yanadis and Chencus belong to same stock. Both groups trace their descent from common ancestor called *Chenchu Lakshmi*. Yanadis are broadly categorized into 4 endogamous sub-groups on the basis of occupations and dietary habits. The main divisions are Reddi yanadi, Adavi yanadis, Paki yanadis, Challa yanadis. Yanadis are

*Corresponding author. E-mail: csreddy_nrsa@rediffmail.com.
Tel.: 040 23884219.

traditional inland fisherman and watchers in the fields of upper caste. Their settlements are generally found on canal and tank bunds (Rao, 1993).

Earlier, some ethnobotanical works in Cuddapah district were carried out during 1985 - 1997 (Reddy et al., 1991; Vedavathy et al., 1991; Vedavathy, 1996; Reddy, 1995; Sudarshanam et al., 1995; Reddy et al., 1996, 1997). However, the present study carried out during 2005 - 2006 shows several new applications of medicinal plants.

MATERIALS AND METHODS

The present data is outcome of field research carried out as part of floristic and ethnobotanical studies during 2005 to 2006. The ethno-medicinal information was gathered from tribes and non tribes who practice and have experience in the use of phytomedicines. Of the 14 informants 11 are men and 3 are women, whose age ranged from 45 to 70 years. Interviews were conducted in a place where the informants were most comfortable. Information regarding gathering, preparation and use were collected. The information of these plants comes in the form of local names and at the end of each interview, specimens of plants mentioned for their medicinal uses were collected and identified. Specimens were identified with the help of the Floras (Gamble and Fischer, 1915 - 1935; Ellis, 1987). The voucher specimens are deposited in Herbarium of the Laila research centre, Vijayawada, Andhra Pradesh for further reference.

Enumeration

Plant species are alphabetically arranged. The botanical name of the species is followed with family name in parenthesis, vernacular name, habit, information on ethnic uses and notes.

***Albizia thompsoni* Brandis (Mimosaceae);**

Vern. name: Velugu Chinta.

Habit: Tree.

Uses: Skin diseases: Stem bark paste used as an external application. Ulcers: Leaf paste used as an external application.

Note: In red data book of Indian plants it was included under vulnerable (VU) category. It is an endemic species to southern India.

***Aristolochia indica* L. (Aristolochiaceae)**

Vern. name: Nalleshwari.

Habit: Twiner.

Uses: Snake bite: Root bark (4 - 5 inches) crushed with 4 - 5 pepper and garlic cloves and the extract administered 3 - 4 times in a day.

***Boswellia ovalifoliolata* Balakr. and Henry (Burseraceae)**

Vern. name: Guggilam, Sambrani.

Habit: Large tree.

Uses: Scorpion sting: Resin used as an external application; Children's diseases: Gum burnt and fumes spread out in home.

***Cassia fistula* L. (Caesalpiniaceae)**

Vern. name: Rela.

Habit: Tree.

Uses: Rheumatism: Flower extract (12 – 15 ml) taken daily once for fortnight.

***Ceropegia spiralis* Wight. (Asclepiadaceae)**

Vern. name: Nimmati gadda.

Habit: Tuberous herb.

Uses: Indigestion: A teaspoon of tuber paste taken daily once for 3 days.

Note: In red data book of Indian plants it was included under vulnerable (VU) category. It is an endemic species of southern India.

***Cocculus hirsutus* (L.) Diels (Menispermaceae)**

Vern. name: Dusaari.

Habit: Climber.

Uses: Mouth ulcers: Tender leaves used as a curry.

***Commiphora caudata* (Wight and Arn.) Engler (Burseraceae)**

Vern. name: Konda raavi.

Habit: Tree.

Uses: Foot cracks: Stem paste used as an external application.

***Curcuma pseudomontana* Graham (Zingiberaceae)**

Vern. name: Adavi Pasupu.

Habit: Tuberous Herb.

Uses: Swellings due to wounds: Slightly warmed tuber paste used as an external application.

Note: It is an endemic species of southern India.

***Cycas beddomei* Dyer (Cycadaceae)**

Vern. name: Paireetha.

Habit: Palm like gymnosperm.

Habitat: Tropical Dry Deciduous forests.

Uses: Debility: It is learnt that people cut the Cycas plant and take out the pith and make it into pieces and used in their diet in case of debility.

Note: In red data book of Indian plants it was included under vulnerable (VU) category. It is endemic to eastern Ghats.

***Decalepis hamiltonii* Wight. and Arn. (Asclepiadaceae)**

Vern. name: Nannari, Maridu gaddalu.

Habit: Climber

Uses: Tonic: Root extract is taken orally to rejuvenate the body and it is the popular health tonic for rural people.

Note: It is commonly found in Rayalaseema districts of Andhra Pradesh. It is an endemic species of southern India.

***Decaschistia cuddapahensis* Paul and Nayar (Malvaceae)**

Vern. name: Magasiri.

Habit: Shrub.

Uses: Aphrodisiac: Half teaspoonful of root paste taken with jaggory (*Saccharum officinarum*) daily once 15 days.

Note: It is restricted to Seshachalam hills of Chittoor and Cuddapah districts of Andhra Pradesh.

***Dodonaea viscosa* (L.) Jacq. (Sapindaceae)**

Vern. name: Pulivailu, Bandaru.
Habit: Shrub.
Uses: Waist pain, gout: Slightly warmed leaf paste applied over the affected area and tied with bandage.

***Dioscorea bulbifera* L. (Dioscoreaceae)**

Vern. name: Nookala gadda, Aadasancha.
Habit: Vine.
Uses: Increases sexual vigour: Sliced boiled tuber is consumed by local people.

***Dioscorea pentaphylla* L. (Dioscoreaceae)**

Vern. name: Yeleru tiga.
Habit: Vine.
Uses: Vegetable: Sliced tuber are soaked in running water, and used as a common vegetable. It is also helpful in case of indigestion.

***Enicostemma axillare* (Lam.) A. Raynal (Gentianaceae)**

Vern. name: Reshka, Gulimidi
Habit: Herb.
Uses: Scabies, itches: Leaves crushed with camphor, mixed in coconut oil and used as an external application.

***Evolvulus alsinoides* (L.) L. (Convolvulaceae)**

Vern. name: Vistikantha.
Habit: Diffused herb.
Uses: Fever: Plant extract (10 ml) with leaf extract of *Ocimum basilicum* (5-10 ml) taken daily twice for 3-4 days.

***Gymnema sylvestre* (Retz.) R. Br. ex Schult. (Asclepiadaceae)**

Vern. name: Poda patri, Teepe tiga.
Habit: Woody climber.
Uses: Gastric troubles: Leaf powder (teaspoon) taken twice or thrice in a day.
Diabetes: Dried leaf powder (half teaspoon) taken daily twice for 5-6 months.

***Habenaria roxburghii* (Pers.) R. Br. (Orchidaceae)**

Vern. name: Leena Gadda.
Habit: Erect Herb.
Uses: Wounds: 10-15 g tubers are crushed with 2-3 g each pepper and garlic.
Note: It is an endemic species of southern India.

***Hemidesmus indicus* (L.) R. Br. (Asclepiadaceae)**

Vern. name: Gudapaala.
Habit: Twining perennial shrub.
Uses: Cooling agent: The roots crushed with the stems of *Tinospora cordifolia* (1:1 ratio), extract (2 teaspoons) administered with one cup of milk daily once for fortnight.

***Ichnocarpus frutescens* (L.) Aiton and Aiton f. (Apocynaceae)**

Vern. name: Nalla tiga.
Habit: Climbing shrub.
Uses: Minimises excess of heat: 1 - 2 teaspoons of dried root powder taken with honey daily once for 2 - 3 months.

***Lepidagathis cristata* Willd. (Acanthaceae)**

Vern. name: Nakka pidi, Lankapindi.
Habit: Herb with woody rootstock.
Uses: Burns, wounds: Tuber ash mixed with coconut oil and used as a lotion.

***Maytenus emarginata* (Willd.) Ding Hou (Celastraceae)**

Vern. name: Danthi.
Habit: Shrub.
Uses: Mouth ulcers: Tender shoots chewed and the sap swallowed.

***Morinda pubescens* J.E. Smith (Rubiaceae)**

Vern. name: Mulugu chettu, Togaru chettu
Habit: Small tree.
Uses: Rheumatic diseases: Stem bark decoction (10 - 15 ml) administered daily once for fortnight.

***Mucuna pruriens* (L.) DC. (Papilionaceae)**

Vern. name: Pativratha.
Habit: Slender climbing herb.
Uses: Tumors on body: Leaf paste used as an external application.

***Pentanema indicum* (L.) Ling (Asteraceae)**

Vern. name: Aggikoora chettu.
Habit: Annual, erect herb.
Uses: Insect sting: Leaf juice used as a lotion.

***Phyllanthus amarus* Schum. (Euphorbiaceae)**

Vern. name: Nelusiri.
Habit: Annual, erect herb.
Uses: Pus oozing in ears: Aerial parts crushed with cumin seed and sugar and extract taken orally.

***Phyllanthus emblica* L. (Euphorbiaceae)**

Vern. name: Usiri.
Habit: Tree.
Uses: Diabetes: Dry fruit pulp powder (one teaspoonful) administered daily twice for 3 - 4 months.

***Phyllanthus indofischeri* Bennet (Euphorbiaceae)**

Vern. name: Konda Usirika
Habit: Small tree.
Uses: Dyspepsia, jaundice: Fruit pulp powder (one teaspoonful) administered daily twice for one week.
Note: It is an endemic species of southern India.

***Physalis angulata* L. (Solanaceae)**

Vern. name: Budda kodisha.
Habit: Erect herb.
Uses: Wounds: Leaf paste used as an external application.

***Pimpinella tirupatiensis* Balakr. and Subram. (Apiaceae)**

Vern. name: Konda Kottimeera
Habit: Herb.
Uses: Scorpion sting: Root paste applied over the bitten area and tied with bandage.
Note: It is an endemic species of Seshachalam hills.

***Pterocarpus santalinus* L.f. (Papilionaceae)**

Vern. name: Erra chandanam, Raktha chandanum.
Habit: Large tree.
Uses: Diabetes: A pinch of stem barks powder taken with a cup of hot water daily once to control.
Note: It is found in Rayalaseema districts of Andhra Pradesh and endemic to eastern Ghats.

***Pupalia lappacea* (L.) Juss. (Amaranthaceae)**

T: Antudu chettu.
Habit: Herb.
Uses: Toothache: Stems used as a tooth brush.

***Rhynchosia beddomei* Baker (Papilionaceae)**

Vern. name: Adavi Kandi.
Habit: Undershrub.
Uses: Abortifacient: Half cup of leaf decoction taken twice in a day for two days.
Note: In Red Data Book of Indian Plants it was included under Vulnerable (VU) category. It is found in parts of Cuddapah, Chittoor, Anantapur districts of Andhra Pradesh. It is endemic to southern India.

***Rhynchosia suaveolens* (L.f.) DC. (Papilionaceae)**

Vern. name: Karu Kandi.
Habit: Undershrub.
Uses: General weakness: Roots crushed with pinch of pepper and ginger and extract (one teaspoonful) administered daily once for one month.

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

Vern. name: Pullangi tiga.
Habit: Leafless, climbing, succulent, jointed shrub.
Uses: Burning micturition: A teaspoonful of plant powder administered with two cups of toddy.

***Santalum album* L. (Santalaceae)**

Vern. name: Chandanam.
Habit: Small tree.
Uses: Skin diseases: Stem bark paste applied externally.
Note: It is facing threat due to high economic potential.

***Shorea tumbergaia* Roxb. (Dipterocarpaceae)**

Vern. name: Thamba Jalari
Habit: Large tree
Uses: Earache: Leaf juice is used as ear drops for children.
Note: It is an endemic species, found in parts of Chittoor, Cuddapah, Nellore districts of Andhra Pradesh.

***Syzygium alternifolium* (Wight) Walp. (Myrtaceae)**

Vern. name: Thamba Jalari, Mogi
Habit: Large tree.
Uses: Dry cough: Young leaves fried in cow ghee and used as a curry.
Note: It is an endemic species, found in parts of Chittoor, Cuddapah, Kurnool districts of Andhra Pradesh.

***Terminalia pallida* Brandis (Combretaceae)**

Vern. name: Tella Karakkaya.
Habit: Large tree.
Uses: Dysentery: 10 - 12 gm of fruit powder taken twice in a day.
Note: It is an endemic species, found in parts of Kurnool, Chittoor, Cuddapah districts of Andhra Pradesh.

***Thespesia lampas* (Cav.) Dalz. ex Dalz. & Gibs. (Malvaceae)**

Vern. name: Adavi benda.
Habit: Undershrub.
Uses: Indigestion: Leaf powder (3 teaspoons) administered with half liter of toddy daily once for three days.

***Tephrosia purpurea* (L.) Pers. (Papilionaceae)**

Vern. name: Yempali.
Habit: Undershrub.
Uses: Scorpion sting: Leaf paste applied over the sting and exposed the area to the heat of a matchstick.

***Tinospora cordifolia* (Willd.) Miers ex Hook f. and Thoms. (Menispermaceae)**

Vern. name: Bael tiga, Tippa teega.
Habit: Woody climber.
Uses: Fever: Stem decoction (2 teaspoons) with honey administered on empty stomach daily twice for 4 - 5 days.
Wounds: Leaf paste used as an external application along with turmeric.

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

Vern. name: Mekameyani aku.
Habit: Climber.
Uses: Retention of urine: Tender stems extract (1-2 teaspoons) taken thrice in a day.

***Vernonia cinerea* (L.) Less. (Asteraceae)**

Vern. name: Saha devi.
Habit: Erect herb.
Uses: Fever: 3 - 4 teaspoons of root extract taken daily twice for 2 - 3 days.

***Ventilago maderaspatana* Gaertner (Rhamnaceae)**

Vern. name: Surugudu teega, Yerra surugudu.
Habit: Liane.
Uses: Gout: Stem bark paste used as an external application.

***Wattakaka volubilis* (L.f.) Stapf (Asclepiadaceae):**

Vern. name: Bandi guruja.
Habit: Climber.
Uses: Paralysis: Root juice is crushed with 6 pepper and extract given daily once to 6 days and leaf juice is applied over paralyzed part.

***Wrightia tinctoria* R. Br. (Apocynaceae)**

Vern. name: Paala kodisha, Palavareni.
Habit: Small tree.
Uses: Boils, wounds: Stem bark crushed with those of *Ailanthus excelsa* (Pedda maanu), paste applied daily once for three days.
Tonsils: Latex bandaged externally on neck.

***Ziziphus xylopyrus* (Retz.) Willd. (Rhamnaceae)**

Vern. name: Gottika.
Habit: Small armed tree.
Uses: Stomachache, indigestion: Fruit powder (3 – 4 g) administered with pinch ginger powder thrice in a day.

RESULTS AND DISCUSSION

The investigation revealed the medicinal properties of 48 species belonging to 44 genera under 30 families. Asclepiadaceae is the dominant family (7 spp.), followed by Papilionaceae (4). The other 42 families contributed two or one species each. Among all the species, trees are found to be more (15) followed by climbers (14), herbs (12) and shrubs (7). Of the 48 species, 4 species (*Albizia thompsoni*, *Ceropegia spiralis*, *Cycas beddomei*, *Rhynchosia beddomei*) are included in Red Data Book of Indian Plants. Interestingly, here are 15 endemic species of southern India are found in these traditional medicinal plants (Reddy et al. 2006).

These medicinal plants use to cure 32 types of ailments. The main ailments in the study area were boils, cough, diabetes, dysentery, dyspepsia, ear-ache, fever, foot cracks, gastric troubles, general debility, gout, insect sting, jaundice, paralysis, mouth ulcers, rheumatism, scorpion sting, skin diseases, snake bite, stomach-ache, tooth-ache and wounds. High numbers of medicinal plant species are available for the treatment of skin diseases and indigestion.

The majority of remedies were taken orally, accounting for 78% of medicinal use, followed by external application (applied topically on skin). To improve the acceptability of certain oral remedies, additives are frequently used.

Most of the reported preparations in the area are drawn from a single plant, mixtures are used rarely. The most widely sought after plant parts in the preparation of remedies in the study area are the leaves (14) and root (9).

Conclusions

The medico-botanical survey of the area revealed that the people of the area possessing good knowledge of herbal drugs but as the people are in progressive exposure to modernization, their knowledge of traditional uses of plants may be lost in due course. So it is important to study and record the uses of plants by different tribes and sub-tribes for futures study. Such studies may also provide some information to biochemists and pharmacologists in screening of individual species and in rapid assessing of phyto-constituents for the treatment of various diseases.

ACKNOWLEDGEMENTS

The first author thanks Shri G. Ganga Raju, chairman, Shri Rama Raju, managing director and Dr. G. Trimuthulu, vice president, Laila Impex, Vijayawada for encouragement. Thanks are due to forest department of Cuddapah district for necessary help during the field studies.

REFERENCES

- Champion HG, Seth SK (1968). A revised survey of the forest types of India. Govt. of India Press, Delhi.
- Ellis JL (1987). Flora of Nallamalais, Vol. 1 and II. Botanical Survey of India, Calcutta.
- Gamble JS, Fischer CEC (1935). Flora of the Presidency of Madras. London. (rep. ed. 1957: BSI, Calcutta).
- Mohan RK (1993). Socio-cultural Profile of Tribes of Andhra Pradesh. TCr&TI, Tribal Welfare Department, Hyderabad.
- Pimbert M, Pretty J (1995). Parks, People and Professionals: Putting "Participation" into Protected Area Management. UNRISD Discussion Paper 57. Geneva.
- Posey D (1992). Traditional knowledge, conservation and "The Rain Forest Harvest". In: Sustainable Harvest and Marketing of Rain Forest Products. Plotkin, M. & L. Famolare, (Eds.). Island Press, Washington DC, pp. 46-50.
- Reddy CS, Brahmam M, Raju VS (2006). Conservation Prioritization of Endemic plants of Eastern Ghats, India. J. Econ. Tax. Bot. 30(4): 755-772.
- Reddy MB, Reddy KR, Reddy MN (1991). Pharmacopoeia of traditional medicine in Cuddapah District, Andhra Pradesh, India, Inter. Jour. of Pharmacognosy 29(1): 1-8.
- Reddy RV (1995). Ethnobotanical and phytochemical studies on medicinal plant resources of Cuddapah district, Andhra Pradesh, India. Ph.D. thesis, S.K. University, Anantapur.
- Reddy RV, Lakhmi NVN, Raju RRV (1996). Traditional crude drug resources used anti-fertility in Cuddapah hills. J. Swamy Bot. Club 13: 67-69.
- Reddy RV, Lakhmi NVN, Raju RRV (1997). Ethnomedicine for ephemeral fevers and anthrax in cattle from the hills of Cuddapah district, Andhra Pradesh, India. Ethnobotany 9: 94-96.
- Sajem AL, Gosai K (2006). Traditional use of medicinal plants by the Jaintia tribes in North Cachar Hills district of Assam, northeast India. J Ethnobiol & Ethnomed. 10: 42-49.
- Sudarsanam G, Siva P (1995). Medicinal ethnobotany of plants used as antidotes by Yanadi tribes in south India, Jour. Herbs, Spices, Med. Pl. 3(1): 57-66.
- Vedavathy S, Rao KN, Rajaiah M, Nagaraju N (1991). Folklore information from Rayalaseema region, Andhra Pradesh for family planning and birth control. Int. J. Pharmacognosy 29: 113-116.
- Vedavathy S (1996). Herbal folk medicine of Yanadis of Andhra Pradesh. Ethnobotany 8: 109-111.