

# Ethnomedicinal Studies in Chamarajanagar District, Karnataka, India

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## Abstract

An ethnobotanical survey was carried out in Chamarajanagar district of Karnataka during 2009-2010. As a result ethnomedicinal uses of 61 plant species belonging to 33 families were recorded from the *Soligas* tribal community of the area. Based on the data recorded, it was found that the plants are used among the inhabitants for the treatment of different ailments like asthma, rheumatoid arthritis, skin disorders and sex related diseases. The folk medicinal uses gathered from the inhabitants and folk 'medicine men' of the study area were compared with the existing literature on ethnobotany. Medicinal plants are arranged in alphabetical order by their botanical name, family, voucher specimen number, local name, part used, mode of preparation followed by folk medicinal uses. The data presented are first-hand and unreported, so far.

**Key words:** Ethnobotany, Chamarajanagar, Karnataka, *Soligas* tribe

## Introduction

The art of herbal healing has very deep root in Indian culture and folklore. Medicinal plants have been playing an important role for the survival of the ethnic communities, who live in remote villages and forests. Traditional folk knowledge, which is mostly undocumented, has been handed down orally from one generation to another. Large sections of the Indian population still rely on traditional herbal medicines (Dubey *et al.*, 2004). Even today, most of the forest tribals depend on local traditional healing systems for their primary health care. The reliability on healing plants is still prevalent among the people inhabiting the deep forests of Western Ghats in India, for their day to day health problems.

Medicinal plants have attracted considerable global interests in recent years. Due to various human activities such as deforestation and other developmental activities, both natural vegetation and traditional cultures in India are fast declining. There is an urgent need to document all ethnobotanical knowledge available with different ethnic and folk communities before their traditional culture is completely lost.

Ethnobotanical knowledge has been documented from various parts of Indian sub-continent (Das and Tag 2006; Singh, 2004). In Karnataka state ethnomedicinal value of plants in possession of various tribal and rural communities for treating various diseases and disorders has been explored

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to some extent in the state of Karnataka (Harsha *et al.*, 2002; Parinitha *et al.*, 2005). However, traditional herbal healing knowledge of a large number of folk communities in the state needs to be documented. Therefore an attempt has been made to collect and document the folk knowledge from tribal, local herbal healers and knowledgeable elder people of different communities residing in forest areas of Chamarajanagar district in Karnataka state.

### Study Area

Chamarajanagar district is located in southern Karnataka. About 49% of the total area in the district is covered by forest. Chamarajanagar wildlife forest division consists of 5 forest ranges. These are Chamarajanagar, Yelanthur, Kolegal, Bylore and K.Gudi ranges. The elevation ranges from 300 to 900m.

About 52 tribal villages are located in the district, particularly in Bilgrims Ranganathan Temples (BRT) hills the demarcated areas of tribal population in Yelanthur, Bylore, Punjur and K. Gudi forest ranges. BRT wildlife sanctuary is well known for its rich diversity of flora and fauna. It has large variety of plants and animal species covering area of about 572 sq km. Different types of vegetations like scrub jungle, dry deciduous, moist deciduous, semi evergreen, evergreen and shoal forests are covered all over the sanctuary. It receives an annual rainfall ranging from 750-1950mm. Moreover, it has large number of endemic plants species. Hence, it has very high population of forest dwelling tribal communities, with largest number of Soligas followed by Jenu Kurumba, Betta Kurumbas. Most of these tribes are inhabitant of the forest of BRT hills. Many religious temples are located in BRT hills like Ranganathan temple and Male Mahadeshwara betta temple in MM hills (Male Mahadeshwara). Two languages are spoken in this district, Kannada being the state language of Karnataka is the main language. Whereas Tamil is a minor language spoken within the district in the areas like Kollegal and Yelandur.

### Methodology

A preliminary survey of Soligas tribal villages in Chamarajanagar district was conducted by survey team of RRIUM, Chennai during 2009-2010. Each area was visited twice in different seasons in 2009-2010. Data on uses of plants as well as plants specimens were collected through interviews and discussion with the tribal practitioners in and around the study area. Information were collected through interview with several persons of Soligas tribal community aged between 40-80, who had good knowledge about plants. Information on local names of the plants, part used, medicinal uses, mode of preparation form

of usage, either fresh or dried and or mixtures with other plants as ingredients, were also collected.

The collected plant specimens were identified taxonomically using the Flora of Presidency of Madras (Gamble, 1936) and the Flora of Tamil Nadu Carnatic (Matthew, 1983). The identified plant specimens were further confirmed from the herbaria of Botanical survey of India, Coimbatore. Botanical specimens were deposited in the herbarium of survey of medicinal plants unit, Regional Research Institute of Unani Medicine, Chennai, for future study and reference.

## Results

Chamarajanagar district wild life forest has a variety of medicinal plants which are used by Soligas for their day to day health care needs. The present study resulted into collection of information from tribal healers using 61 species of plants. The data recorded during the survey is presented in table-1. The plants are arranged alphabetically by botanical name, voucher specimen numbers, local name, part used, method of preparation, mode of administration and medicinal uses. It was observed that commonly occurring plants in the area are used to treat various diseases like asthma, skin diseases, sex related problems, rheumatism, hepatitis, diabetes, piles, ulcers, poisonous bites and wounds healing etc,. This is consistent with other general observations which have been reported earlier on medicinal plants (Kirtikar and Basu, 1999; Anonymous, 1997; Asolkar *et al.*, 1992). Different types of preparation made for medicinal purpose include decoction, juice, powder, paste, oil and plant extract. Drugs are prescribed either single or in a combination of more than one plant / parts of the same or different plants for the treatment of various diseases. In Chamarajanagar district, the local herbal healers and elder people rich in traditional knowledge depend on the natural resources available in the area for their day to day needs. Most of them still consider their herbal knowledge as traditional secret and do not easily disclose this treasure to other people. But, through repeated contacts and discussions they shared this knowledge with the team.

**Table 1** Ethnomedicinal uses of plants from Chamarajanagar district Karnataka

S. No.	Botanical Name/Family/ Voucher specimen number	Local name	Part used, Mode of preparation, and Medicinal uses
1	<i>Aegle marmelos</i> (L.) Corr. / Rutaceae/RRIUM-CH: 9568	Belapatre	Powdered fruit pulp (10 g) is orally given with hot water daily to treat asthma and leaves smoke is inhaled to reduce asthma pain.

S. No.	Botanical Name/Family/ Voucher specimen number	Local name	Part used, Mode of preparation, and Medicinal uses
2	<i>Aerva lanata</i> (L.) A.Juss ex Schult./ Amaranthaceae/ RRIUM-CH : 9427	Poolai	Leaf dissolved in water over night, it is filtered and of this filtrate (100 ml) orally given in case of calculi.
3	<i>Alangium salvifolium</i> (L.f.) Wang./ Alangiaceae/ RRIUM-CH:9348	Ankolemara	Leaf powder (10 g) is orally given with hot water to treat diabetes.
4	<i>Allium cepa</i> L./ Liliaceae/ RRIUM-CH: 9432	Neerulli	Extract of bulb (20-30 ml) is orally given to treat patient suffering from asthma.
5	<i>Alpinia galanga</i> Sw/ Zingiberaceae / RRIUM-CH: 9539	Dhumarasmī	Powder of rhizome (20 g) orally given with hot water to hypnotic patients.
6	<i>Anona squamosa</i> L. / Anonaceae / RRIUM-CH: 9433	Sitaphal	Seed powder (10 g) is orally given with hot water to induce abortion.
7	<i>Argemone mexicana</i> L. / Papavaraceae / RRIUM- CH:9178	Arsina-ummatta	Root paste is externally applied to overcome skin rashes.
8	<i>Aristolochia indica</i> L./ Aristolochiaceae / RRIUM-CH: 9506	Eesvurberus	Root decoction (100 ml) is orally given once daily to treat piles.
9	<i>Asparagus racemosus</i> Willd./ Liliaceae /RRIUM- CH:9263	Thanervitankilangu	Root powder (20 g) is given orally with cow milk daily in cases of spermatorrhoea.
10	<i>Barleria prionitis</i> L./ Acanthaceae / RRIUM- CH: 9128	Mullugoranta	Leaf juice (40-50 ml) is given orally to cure urinary irritation.
11	<i>Bauhinia purpurea</i> L./ Caesalpiniaceae/ RRIUM-CH: 9526	Kempumandara	Powdered bark is made into paste with castor oil and applied externally on bone fracture.
12	<i>Bauhinia varigata</i> L./ Caesalpiniaceae/ RRIUM-CH:9376	Manthari	Dried stem exudates (10 g) mixed with powdered flower buds is prescribed to treat piles.
13	<i>Buchanania lanzan</i> Spr./ Anacardiaceae / RRIUM-CH: 9484	Kattuma	Powdered stem bark (10 g) is given orally with hot water in case of rheumatic pain.

S. No.	Botanical Name/Family/ Voucher specimen number	Local name	Part used, Mode of preparation, and Medicinal uses
14	<i>Butea monosperma</i> (Lam.)/ Kuntze/ Papilionaceae RRIUM-CH: 9440	Muttalu gida	Flower paste is externally applied to rheumatic swelling.
15	<i>Caesalpinia bonduc</i> (L.) Roxb./ Caesalpinaceae/ RRIUM-CH:9357	Kalachikai	Roasted seed powder (20 g) is orally given twice daily for diabetic patients.
16	<i>Cardiospermum halicacabum</i> L./ Sapindaceae/ RRIUM-CH:9255	Mudakathan	Leaf smoke is inhaled to reduce asthmatic pain.
17	<i>Cardiospermum canescens</i> Wal/ Sapindaceae / RRIUM-CH: 9169	Kanakaia	Leaf extract (50-100 ml) is given orally in rheumatic pain.
18	<i>Cinnamomum wighti</i> Meissn/ Lauraceae / RRIUM-CH:9314	Dalchini	Bark decoction (100 ml) is given orally as expectorant.
19	<i>Cissus quadrangularis</i> L./ Vitaceae / RRIUM-CH: 9429	Perandai	Stem paste is orally given daily after meals to regularize menstruation.
20	<i>Citrus limon</i> (L.) Burm / Rutaceae /RRIUM-CH: 9465	Nimbe	Fruit juice (50 ml) is mixed with (10 ml) honey in hot water and given on empty stomach to reduce obesity.
21	<i>Clitoria ternatea</i> L./ Papilionaceae / RRIUM-CH:9231	Sankupuspam	Fruit paste is applied externally on insects and scorpion-bites.
22	<i>Coccinia grandis</i> (L.) Voigt/ Cucurbitaceae / RRIUM-CH: 9217	Kovi	Powdered root (10 g) is given orally with hot water in case of diabetes.
23	<i>Cuscuta reflexa</i> Roxb. / Cuscutaceae /RRIUM- CH:9177	Ottuchedi	Plant extract (100 ml) is orally given daily for liver diseases and hepatitis.
24	<i>Eclipta alba</i> L. / Asteraceae/ RRIUM-CH:9394	Kadige	Leaf extract (10-20 ml) is given with cow milk for jaundice.
25	<i>Euphorbia hirta</i> L./ Euphorbiaceae/ RRIUM-CH:9387	Ammanpacharisi	Smoke of powdered plant (in cigarette form) is inhaled to reduce asthmatic pain.

S. No.	Botanical Name/Family/ Voucher specimen number	Local name	Part used, Mode of preparation, and Medicinal uses
26	<i>Ficus racemosa</i> L./ Moraceae/ RRIUM-CH: 9573	Atthi	Fruit is soaked in honey for 15 days and taken daily orally in male weakness.
27	<i>Helicteres isora</i> L./ Sterculiaceae/ RRIUM-CH:9223	Bhootakaralu	Seeds (3 nos.) are soaked in 100 ml coconut oil and applied on hair to check hair fall.
28	<i>Hygrophila auriculata</i> (Schum.) Heine/ Acanthaceae/ RRIUM-CH: 9220	Kolavalike	Seed powder (10-15 g) orally given with cow milk in male weakness.
29	<i>Jatropha curcus</i> L. / Euphorbiaceae / RRIUM-CH:9179	Kadaharalu	Leaf powder (10 g) mixed with 5 g black pepper powder is boiled in 100 ml water and orally given daily twice to cure leucorrhoea.
30	<i>Leucas cephalotes</i> (Koen. ex Roth) Spr / Lamiaceae/ RRIUM-CH:9293	Thumbai	Leaf paste made with turmeric is applied externally to treat dermatitis.
31	<i>Limonia acidissima</i> L./ Rutaceae/ RRIUM-CH: 9222	Belada	Fruit decoction (100 ml) is given orally for breathing trouble.
32	<i>Mirabilis jalapa</i> L./ Nyctaginaceae/ RRIUM-CH:9281	Madhyanha mallige	Root paste with castor oil is applied externally as spasmolytic.
33	<i>Mucuna pruriens</i> Bak/ Papilionaceae/ RRIUM-CH:	Nassuganni	Seed powder (10 g) is given orally with cow milk in case of impotency.
34	<i>Nelumbo nucifera</i> Gaertner./ Nelumbonaceae/ RRIUM-CH:9256	Tavare/Ambal	Rhizome extract (50 ml) mixed with (10 ml) 'Neem oil' is given orally in bleeding piles.
35	<i>Nerium indicum</i> Mill./ Apocynaceae/ RRIUM-CH:9405	Kanagilu	Root paste mixed with 'Neem oil' is applied externally to treat leprosy.
36	<i>Phyllanthus amarus</i> L./ Euphorbiaceae/ RRIUM-CH:9379	Kirunelli	Plant Juice (100 ml) is orally given in case of jaundice.
37	<i>Plantago ovata</i> Forsk/ Plantaginaceae / RRIUM-CH:9202	Ispuko	Seed decoction (60-80 ml) is given to women in the morning to prevent abortion.

S. No.	Botanical Name/Family/ Voucher specimen number	Local name	Part used, Mode of preparation, and Medicinal uses
38	<i>Pongamia pinnata</i> L./ Papilionaceae/ RRIUM-CH: 9119	Honge-mara	Seed paste with turmeric powder is applied externally to treat scabies.
39	<i>Pterocarpus marsupium</i> Roxb/ Papilionaceae/ RRIUM-CH: 9129	Hanemara	Bark paste is used as tooth powder to cure mouth ulcers.
40	<i>Randia dumetorum</i> (Retz) Poir/ Rubiaceae/ RRIUM-CH: 9117	Mangari kai	Fruit paste is applied externally to cure leach-bite and itching.
41	<i>Rauvolfia serpentina</i> (L.) Benth ex kurz./ Apocynaceae / RRIUM-CH: 9535	Sutranabi	Root decoction (100 ml) is orally given in case of poisonous bite.
42	<i>Ricinus communis</i> L./ Euphorbiaceae/ RRIUM- CH: 9143	Haralu /Audla	Seed oil (10 ml) is given orally in constipation.
43	<i>Rubia cordifolia</i> L./ Rubiaceae/ RRIUM-CH: 9444	Majeeth	Root and fruit powder (in equal quantity) is orally given with hot water to treat epilepsy.
44	<i>Ruta graveolens</i> L./ Rutaceae/ RRIUM-CH: 9538	Sudabugida	Leaf extract (50 ml) boiled in (100 ml) castor oil is cooled and applied externally on affected parts for rheumatic pain.
45	<i>Sapindus mukorossi</i> Gaertn./ Sapindaceae / RRIUM-CH:9221	Aralakai	Fruit powder made into pills (2 g) with Neem oil is given orally to victims of rabies.
46	<i>Semecarpus anacardium</i> L.f/ Anacardiaceae/ RRIUM-CH: 9559	Geru Beeja	Fruit powder (5 g) is given orally with hot water daily for the treatment of arthritis.
47	<i>Solanum nigrum</i> L./ Solanaceae/ RRIUM-CH:9228	Kakmunchi	Leaf extract (50 ml) is give orally to treat intestinal ulcers.
48	<i>Solanum virginianum</i> Burm.f/ Solanaceae/ RRIUM-CH: 9173	Kandakathri	Fruit powder is used as tooth powder in tooth ache and swelling.
49	<i>Sphaeranthus indicus</i> L./ Asteraceae/ RRIUM-CH: 9491	Karandagida	Plant smoke is inhaled as cigarette in case of painful asthma.

S. No.	Botanical Name/Family/ Voucher specimen number	Local name	Part used, Mode of preparation, and Medicinal uses
50	<i>Strychnos nux-vomica</i> L./ Loganiaceae/ RRIUM-CH:9399	Kajira	Seed paste is applied externally to treat facial paralysis.
51	<i>Syzygium cumini</i> (L) Skeels/ Myrtaceae / RRIUM-CH: 9148	Nerulumara	Fruit juice (100 ml) is orally given for liver diseases.
52	<i>Tamarindus indica</i> L./ Papilionaceae/ RRIUM-CH: 9423	Hunase	Leaf juice is given orally for bleeding piles.
53	<i>Tephrosia purpurea</i> (L.) Pers./ Papilionaceae/ RRIUM-CH:9368	Kaggi	Smoke of leaves is inhaled as cigarette to overcome asthmatic pain.
54	<i>Terminalia arjuna</i> (DC) W&A/ Combretaceae/ RRIUM-CH:	Holematti	Bark decoction (100 ml) is given orally to check cardiac problems.
55	<i>Terminalia bellirica</i> (Gaert) Roxb. / Combretaceae/ RRIUM-CH: 9498	Thandri	Fruit decoction (50 ml) is orally given to check diarrhoea.
56	<i>Terminalia chebula</i> Retz / Combretaceae/ RRIUM-CH:9351	Alale/Aralaikai	Decoction of fruit (100 ml) is given orally to treat asthma.
57	<i>Terminalia crenulata</i> Roth/ Combretaceae / RRIUM-CH: 9135	Karimatti	Seed oil is externally applied to cure rheumatic pain. The oil is also used against dandruff.
58	<i>Tinospora cordifolia</i> (Willd.) Hook.f.& Thomson/ Menispermaceae RRIUM-CH: 9426	Manjatti	Stem extract is applied externally to reduce joint pain.
59	<i>Tribulus terrestris</i> L./ Zygophyllaceae/ RRIUM-CH:9410	Negil-mullu	Seed decoction (100 ml) is orally given in case of urinary infection and irritation.
60	<i>Withania somnifera</i> Dunal./ Solanaceae/ RRIUM-CH: 9540	Sogade-beru	Root powder (20 g) is orally given with hot water to improve sexual vigor.
61	<i>Wrightia tinctoria</i> (Roxb.) R.Br./ Apocynaceae/ RRIUM-CH: 9529	Bilikudegida	Leaf extract (50 ml) is boiled in coconut oil (100 ml) and applied externally to cure psoriasis.



## Discussion

The study of ethnomedicine as art of therapeutics is of paramount importance in addressing health problems of traditional communities. Previous reports on the ethno-botany of different districts in Karnataka, and adjoining areas provide evidence for the presence of numerous medicinal plants used by various tribal communities (Bhandary *et al.*, 1995; Bhandary *et al.*, 1996; Harsha *et al.*, 2002; Parinitha *et al.*, 2005). But no systematic ethnobotanical survey has been undertaken in Chamarajnar district and adjoining areas, except few reports on the documentation of medicinal plants used by the tribes like Siddis and Gowlis.

It has been observed that therapeutic uses of herbal drugs and drug preparations differ from one region to the other. For example, people in different villages in India, exclusively use *Andrographis paniculata* Wall. ex Nees. for curing malarial fever, snakebite, headache, dysentery, diarrhoea, ulcers and fever (Das and Tag., 2006; Nayak *et al.*, 2004; Vidhyrthy and Gupta, 2004). Whereas, tribals of Chamarajanagar use *Andrographis paniculata* Wall. ex Nees. to treat skin allergies. The traditional knowledge about utilization of local plants species is vital in alternate health care system as well as for the self sustenance of local population. On the other hand, high costs of synthetic drugs coupled with numerous side effects are forcing people to rely on the locally available herbal medicine for their health care needs.

## Conclusion

The present study reveals that traditional medicines are still in common use by the Soligas tribal communities in the area explored. Therefore, the study ascertains the value of a large number of plants used in tribal medicine for various diseases which could be of considerable interest in the development of new drugs. The collected data shows that majority of the medicines are taken orally as single drugs. However, mixtures are also used for treating some specific ailments. The people of the study area still have strong belief in the efficacy and success of herbal medicine. The results of the present study provide evidence that medicinal plants continue to play an important role in the health care system of *Soligas* community. It may be concluded that the present studies may attract the attention of ethno-botanists, phytochemists and pharmacologists for critical investigation of medicinal plants presented in the article to find out some beneficial therapeutic recipes for the treatment of diseases as reported herein.

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