Some medicinal plants used by Irular, the tribal people of Marudhamalai hills, Coimbatore, Tamil Nadu

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Abstract
The present paper deals with ethnobotanical study on 75 plant species used for several common diseases like scabies, skin allergies, diabetes, headache, jaundice, scorpion bite, diarrhoea, leucoderma, rheumatism, earache, wounds, leprosy, asthma, dysentery, etc. by the Irulars (tribal) people of Marudhamalai Hills, Coimbatore district, Tamil Nadu. The botanical, vernacular and family names, mode of preparations and uses have been provided for further pharmacological and clinical evaluations.

Keywords: Ethnobotany, Medicinal plants, Irulars, Tribals, Marudhamalai hills, Coimbatore, Tamil Nadu.

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Introduction
In India, exhaustive ethnobotanical studies are being carried out in various ethnic communities because the floral diversity and rich endemic taxa of our country are of significance for richness of ethnomedicine. During the last four decades, a large number of plants used in indigenous practices have been discovered through ethnobotanical studies in India1-15. In recent years some workers like Palanisamy et al, Balasubramanian et al, Hamasavalli, Nikkitha et al, Kathikeyani et al and Senthilkumar et al16-23, have reported various medicinal plants used by Irular tribals in Coimbatore district. The present paper attempts to bring information on traditional knowledge of the primitive ethnic tribe, Irulars of Marudhamalai hills related to medicinal uses of 75 plants.

Materials and Methods
Marudhamalai hills are situated at a distance of 15 km from Coimbatore. It consists of an environment of moist dry-deciduous type of forest at an altitude of 426.72m MSL, 11.04E of longitude and 76.93N latitude. The North-East monsoon sets in effecting heavy rains from the end of October to November with an average rainfall of 117.5mm. The area has a predominant red soil impregnated with organic matter and granite; bedrock is overlaid with shallow, sandy loam and glacial soils which are moderate to well drained. The authors conducted field study during the period of November 2003 to January 2004 in Irulars (tribal) dominated areas of Marudhamalai hills at Coimbatore. The study technique suggested by Jain9, 11 was followed during the survey. Plants were identified and confirmed with the authentic herbarium of Botanical Survey of India (Southern Circle), Coimbatore. The voucher specimens were deposited in the Department of Botany, Bharathiar University, Coimbatore, India.

Enumeration
For each species, botanical, family and local name (LN), mode of preparation and uses are being provided here for further reference. The voucher specimen numbers (VSN) are given in parenthesis.

1. Abrus precatorius Linn.; Family-Fabaceae; LN-Kundumani
   The leaves are crushed and applied on the affected part(s) for curing scabies (VSN- MS 97).

2. Abutilon indicum (Linn.) Sweet; Family-Malvaceae; LN-Thuthi
   The leaves are crushed to extract juice which is taken daily to ease childbirth (VSN- MS 784).
Fig. 1(a-k) : Some ethnomedicinal plants in Marudhamalai hills

a. Sarcostemma acidum; b. Jatropha glandulifera; c. Catharanthus roseus; d. Martynia annua; e. Pergularia daemia;
f. Toddalia asiatica var. floribunda; g. Pongamia pinnata; h. Clitoria ternatea; i. Boerhaavia diffusa;
j. Asparagus racemosus; k. Abrus precatorius
3. *Acalypha alnifolia* Klein ex Willd.; Family- Euphorbiaceae
   Crushed leaves are used in dysentery (VSN- MS 89).

4. *Acalypha fruticosa* Forsk.; Family-Euphorbiaceae; LN-Sinni
   Roots and leaves are used to cure stomachache, dyspepsia and given as antidote (VSN- MS 334).

5. *Acalypha indica* Linn.; Family-Euphorbiaceae
   Whole plant is crushed and the juice is given to cure bronchitis in children (VSN- MS 274).

6. *Aerva lanata* Juss. ex Schult.; Family-Amaranthaceae; LN-Sirupulai
   Leaves are macerated and few drops are given orally to the asthmatic child at the time of wheezing (VSN- MS 55).

7. *Albizia lebbek* Benth.; Family-Mimosaceae; LN-Katuvaivagi
   Flowers are used to cure skin eruptions, swellings and antidote to poison (VSN- MS 300).

8. *Aloe vera* (Linn.) Burm. f.; Family-Liliaceae; LN-Chotthukatalai
   Fresh juice is used as cathartic and cooling. It is also used in treating fever and eye diseases (VSN- MS 112).

9. *Amaranthus viridis* Linn.; Family-Amaranthaceae; LN-Nelavemu
   Leaves are used as emollient in scorpion sting (VSN- MS 57).

10. *Andrographis paniculata* Wall.
    ex Nees; Family-Acanthaceae; LN-Nelavembu
    Leaf decoction is given to cure diabetes (VSN- MS 418).

11. *Annona squamosa* Linn.; Family-Annonaceae; LN-Sitapalam
    Fruit juice is taken orally to control dysentery. Seed paste is applied on the forehead for relief from headache (VSN- MS 89).

12. *Argemone mexicana* Linn.; Family-Papaveraceae; LN-Kudiyoeiti
    The seed powder is used to treat colic pain and dysentery (VSN- MS 5).

13. *Argyreia nervosa* (Burm.f.) Boj.; Family-Convolvulaceae; LN-Samuthra pachai
    Leaves are used as abortifacient; and applied as poultice on wounds and skin diseases (VSN- MS 247).

14. *Aristolochia indica* Linn.; Family-Aristolochiaceae; LN-Isramuli, Adgam
    Root tonic is used as stimulant and to treat menstrual problems. In powdered form it is given in honey for leucoderma (VSN- MS 270).

15. *Asparagus racemosus* Willd.; Family-Liliaceae; LN-Thamnervittan, Kizhay, Ammaikodi
    Root extract is used in diarrhoea, dysentery and general debility (VSN- MS 08).

16. *Asystasia gangetica* T. Anders.; Family-Acanthaceae; LN-Palagai
    Root paste is applied to cure skin allergies (VSN- MS 97).

17. *Bidens pilosa* Linn.; Family-Asteraceae
    The warm juice of the fresh plant is used to treat earache and conjunctivitis, and as a styptic on wounds (VSN- MS 275).

18. *Blepharis repens* (Vahl) Roth.; Family-Acanthaceae
    Leaves crushed and the paste is applied on the forehead in headache (VSN-MS 400).

19. *Boerhaavia diffusa* Linn.; Family-Nyctaginaceae; LN-Mukurattai
    Leaf paste is applied on the cuts and wounds to stop bleeding (VSN- MS 75).

20. *Buchanania lanzan* Spreng.; Family-Anacardiaceae; LN-Mudaima, Moral
    The roots and leaves are pounded, mixed with buttermilk and given in diarrhoea (VSN- MS 177).

21. *Capparis sepiaria* Linn.; Family-Capparidaceae; LN-Karunjurai
    Decoction of leaf is used in cough and skin diseases (VSN- MS 90).

22. *Carissa carandas* Linn.; Family-Apocynaceae; LN-Kalakkay
    Decoction of the leaves is given for fever (VSN- MS 146).

23. *Cassia angustifolia* Vahl; Family-Caesalpiniaceae; LN-Nilavirai
    Leaves and fruits are used as laxative and purgative (VSN- MS 48).

24. *Cassia auriculata* Linn.; Family-Caesalpiniaceae; LN-Aavarai
    Seeds are ground and the paste

25. *Cassia occidentalis* Linn.; Family-Caesalpiniaceae; LN- Thagarai

Seeds and leaves are used externally in skin troubles. Leaves are also used in foot and mouth disease of cattle (VSN- MS 123).

26. *Catharanthus roseus* G. Don; Family- Apocynaceae; LN- Nithyakalyani

The root decoction is given orally as an abortifacient (VSN- MS 1405).

27. *Celosia argentea* Linn.; Family- Amaranthaceae; LN- Alarapoo

The leaves are crushed and the juice is taken orally twice daily to ease childbirth (VSN- MS 648).


Seeds are given internally as a vermifuge (VSN- MS 507).

29. *Cleome monophylla* Linn.; Family- Capparidaceae

Pounded root is used to restore consciousness from fainting (VSN- MS 69).

30. *Clitoria ternatea* Linn.; Family- Fabaceae; LN- Sanguchedi

Seeds are crushed with water to form a paste, which is slightly warmed and applied on testis to cure swellings due to syphilis (VSN- MS 159).

31. *Coccinia indica* Wight & Arn.; Family- Cucurbitaceae; LN- Kovai

Powdered leaves or fresh leaves are taken in treating diabetes (VSN- MS 2).

32. *Commelina benghalensis* Linn.; Family-Commelinaceae; LN- Kanavazhi

Whole plant is used to treat leprosy (VSN- MS 792).

33. *Corchorus trilocularis* Linn.; Family-Tiliaceae; LN- Peratti, Talakkaippoondu

Plant macerated with water yields, mucilage, prescribed as a demulcent. Seeds are used in fever and for cleaning bowls (VSN- MS 35).

34. *Crotalaria retusa* Linn.; Family- Fabaceae

Plant is used in scabies and impetigo (VSN- MS 57).

35. *Crotalaria verrucosa* Linn.; Family- Fabaceae; LN- Kilukiluppai

The leaf decoction is given orally to cure jaundice (VSN- MS 3).

36. *Dodonaea viscosa* Linn.; Family- Sapindaceae; LN- Virali

Crushed stems are tied on the fractured part to hasten the fractured bone setting. Leaf paste is applied on swelling in cattle until cured (VSN- MS 138).

37. *Emilia sonchifolia* DC.; Family- Asteraceae

Leaf juice is useful in treating eye inflammation. Root is used in diarrhoea (VSN- MS 271).

38. *Erythroxylum monogynum* Roxb.; Family- Erythroxylaceae; LN- Sempulichan

An infusion of the wood bark is administered as stomachic, diaphoretic and diuretic (VSN- MS 107).


Dried leaves in the form of tincture are used in asthma and chronic bronchitis (VSN- MS 111).

40. *Euphorbia thymifolia* Linn.; Family-Euphorbiaceae; LN- Sittrapaladai

Dried leaves and seeds are aromatic, astringent and stimulant, they are used as laxative (VSN- MS 280).

41. *Euphorbia tirucalli* Linn.; Family-Euphorbiaceae; LN- Tirukalli, Kalli

Decoction of the tender branch or the root is given to treat colic and gastralgia (VSN- MS 201).

42. *Evolvulus alsinoides* Linn.; Family- Convolvulaceae; LN- Vishnukarandai

Leaves are smoked in chronic bronchitis and asthma (VSN- MS 260).

43. *Ficus benghalensis* Linn.; Family- Moraceae; LN- Aalamarram

Infusion of the bark is used as astringent, tonic and in dysentery, diarrhoea and the bark is used in diabetes. Latex is used to relieve toothache, cough and genital diseases (VSN- MS 182).

44. *Gisekia pharnaceoides* Linn.; Family- Aizoaceae; LN- Manalikkirai
Plant decoction is used for worms (VSN- MS 198).

45. *Gloriosa superba* Linn.; Family-Liliaceae; LN-Kannuvalikodi
   Root is purgative, anthelmintic and used to cure leprosy, parasitical infection of skin and piles. Leaves are used to destroy head lice (VSN- MS 423).

46. *Grewia hirsuta* Vahl.; Family-Tiliaceae
   The fruits and roots are used to treat acute diarrhoea and dysentery (VSN-MS 69).

47. *Gynandropsis gynandra* (Linn.) Briq.; Family- Capparidaceae; LN-Velakura
   Leaf juice is used for earache (VSN- MS 60).

48. *Jatropha glandulifera* Roxb.; Family-Euphorbiaceae; LN-Dundigamu
   Seed oil is used in chronic ulcerations, foul wound ringworm, rheumatism and paralysis. Plant juice used to remove film from the eyes. Water extract of root is given to children suffering from abdominal enlargement (VSN- MS 244).

49. *Justicia tranquebariensis* Linn.f.; Family-Acanthaceae; LN-Pinnakkupootu
   Young leaves are crushed and filtered in pure water, kept in dark for overnight. The infusion is given internally in the morning for curing jaundice (VSN- MS 955).

50. *Lawsonia inermis* Linn.; Family-Lythraceae; LN-Maruthani
   Leaves are used to dye and improve hair conditioning and soften skin of hands. Young shoot is used in leprosy (VSN- MS 416).

51. *Leptadenia reticulata* Wight & Arn.; Family-Asclepiadaceae; LN-Palakudai
   Plant stimulant, tonic, useful in leprosy (VSN- MS 1205).

52. *Leucas aspera* Spreng.; Family-Lamiaceae; LN-Tumbai
   Two or three drops of leaf juice with onion juice are dropped through nostrils to get relief from chronic headache. Root is rubbed on tooth to get relief from pain (VSN- MS 18).

53. *Martynia annua* Linn.; Family-Martyniaceae; LN-Pulinagam, Thelkodukkukai
   The leaves are used to treat epilepsy and are applied to cure tuberculosis, the leaf juice is used as a gargle to relieve sore throat (VSN- MS 889).

54. *Mirabilis jalapa* Linn.; Family-Nyctaginaceae; LN-Pattarashu
   Leaf paste is applied to the affected part(s) for curing skin eruptions (VSN- MS 14).

55. *Mundulea sericea* A. Cheval.; Family-Fabaceae; LN-Kattupporasu, Pillavaram
   Plant is insecticidal and seeds are used as fish poison (VSN- MS 87).

56. *Naringi crenulata* (Roxb.) Nicolson; Family-Rutaceae; LN-Kattuelumichai
   Fruit decoction is used as antidote to insect poison. Root is used in colic (VSN- MS 877).

57. *Oxalis corniculata* Linn.; Family-Oxalidaceae; LN-Puliyarai
   Leaves as such are eaten or leaf juice is taken orally to check dysentery (VSN- MS 83).

58. *Passiflora edulis* Sims.; Family-Passifloraceae
   Juice of ripe fruit is taken to cure jaundice (VSN- MS 3).

59. *Passiflora foetida* Linn.; Family-Passifloraceae; LN-Mupparisa valli, Siruppanakkalli
   The leaves are used in wound dressing and are sometimes applied to the head to treat headache and giddiness (VSN- MS 4).

60. *Pergularia daemia* (Forsk.) Chiov.; Family-Asclepiadaceae; LN-Velipparuthi
   Leaf juice is used as expectorant and to treat infantile diarrhoea and asthma. Root bark is mixed with cow milk and used a purgative in rheumatism (VSN- MS 949).

61. *Phyllanthus amarus* Schum. & Thon.; Family-Euphorbiaceae; LN-Kizhanellai
   Leaf juice is administered to cure fever and jaundice (VSN- MS 10).

62. *Polycarpaea corymbosa* Lam.; Family-Caryophyllaceae; LN-Nilaisedachi
   Leaves are used as poultice
63. *Pongamia pinnata* Pierre.; Family-Fabaceae; LN- *Pungai, Ponga*
   Root juice is used for curing sores and cleaning foul ulcers. It is given internally with equal quantities of coconut milk and lime water for treating gonorrhoea (VSN- MS 40).

64. *Richardia scabra* Linn.; Family-Rubiaceae
   The root possesses emetic and diaphoretic properties (VSN- MS 11).

   A dilute extract of the whole plant is used internally to relieve rheumatic pains (VSN- MS 816).

66. *Sida cordata* (Burmn. f.) Borssum; Family-Malvaceae; LN- *Arival manippundu*
   The leaf juice is effective in treating diarrhoea during pregnancy. The pounded leaves are applied locally to relieve cuts and bruises (VSN- MS 1088).

67. *Sida rhombifolia* Linn.; Family-Malvaceae; LN- *Chitramutti*
   Root is used to cure rheumatism. The crushed fruits are used externally in the form of paste to relieve headache (VSN- MS 1163).

68. *Spondias pinnata* (Linn. f.) Kurz; Family-Anacardiaceae; LN- *Mambulichi*
   Leaf juice is used for earache (VSN- MS 56).

69. *Strychnos nux-vomica* Linn.; Family-Loganiaceae; LN- *Yetti*
   The paste of stem bark is applied on the abdomen to cure stomachache (VSN- MS 15).

70. *Thespesia populnea* Soland. ex Correa; Family-Malvaceae; LN- *Poovarasu*
   Crushed fruits are applied on insect stings as an antidote (VSN- MS 1172).

71. *Toddalia asiatica* (Linn.) Lam. var. *floribunda* Gam.; Family-Rutaceae; LN- *Milakaranai*
   Root is ground with lemon fruit (*Citrus* sp.) and applied to get relief from itching and allergy related skin diseases (VSN- MS 109).

72. *Trianthema portulacastrum* Linn.; Family-Aizoaceae; LN- *Sharunnai*
   An infusion of the root is given internally to relieve constipation (VSN- MS 797).

73. *Vernonia cinerea* Less.; Family-Asteraceae; LN- *Mukuttipundu*
   Plant juice is used for indigestion, piles and malaria. Leaf juice is useful for amoebiasis, eczema, ringworm and other skin troubles. Flowers are used to cure conjunctivitis (VSN- MS 683).

74. *Vitex negundo* Linn.; Family-Verbenaceae; LN- *Nochi*
   Leaf infusion is taken to cure asthma (VSN- MS 37).

75. *Ziziphus mauritiana* Lam.; Family-Rhamnaceae; LN- *Elanthai*
   A decoction of the root bark is used in the treatment of diarrhoea and dysentery (VSN- MS 01).

### Conclusion

It is evident from the present study that several plants in Marudhamalai hills possess genuine medicinal efficacy hence the indigenous people of this district practice traditional medicinal system for the treatment of various diseases. But with the advent of rapid social transformation and tourism development *Irulars* are forced to shift from the natural habitats. Therefore, to save this traditional heritage documentation of the traditional knowledge of older generation is necessary for the sustainable development of younger generation on natural resources. In this context, observations on 75 species belonging to 43 families were made during the survey. Suitable clinical trials coupled with extensive phytochemical investigations are required to decipher the chemical nature of biologically active compounds for more scientific utility.

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