

Some Most Important Medicinal Plants used by Pulaya Tribes from Thirumoorthy Hills of Tirupur District, Tamilnadu, India

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Abstract: An ethnomedical survey was carried out among the Pulaya ethnic groups of Tirumurthy Hills, Western Ghats, Tirupur region of Tamil Nadu, India. This study includes 50 most valuable medicinal plants that have more curative properties were studied in detail. Pulaya Ethnic use herbal medicine to treat dysentery, diabetes, jaundice, asthma, fertility, anti fertility, hay fever etc.

Keywords: Ethnobotany, Pulaya tribes, Thirumoorthy hills, Ailments etc.

1. INTRODUCTION

Native herbal remedies are usually used against many infectious diseases from long back. Plant and plant products are recognized to possess excellent antimicrobial properties and play an important role in preventing and curing both contagious and non contagious diseases. The existing accepted allopathic practice has gradually developed over the years of scientific efforts of scientists; however, the bases of development remain in the roots of traditional medicine. Plants are the most exclusive source of drugs for the majority of the human population. The use of plants in traditional medicine system has been extensively documented in many different cultures and countries of the world.

Conventional medicine has remained as the most reasonable and easily reachable source of treatment in the primary health care system of resource-poor communities. The local people have a long record of traditional plant practice for therapeutic purposes. The curative use of plants is very old. The writings designate that remedial use of plants is as old as 4000 - 5000 BC. In India, initial references of use of plants as medicine appear in Rig Veda that is believed to be written between 1600 - 3500 BC. later on the properties and therapeutic uses of medicinal plants were studied in detail and noted empirically by the ancient physicians (an indigenous system of medicine) which are a basic foundation of ancient medical science in India (Prakash and Gupta 2005). The medicinal plant is a vital element of indigenous medical systems all over the world. The ethnobotany provides a wealthy resource for natural drug research and development (Farnsworth, 1990). The conventional use of herbal medicines implies considerable historical use, and this is positively true for many products that are available as customary herbal medicines. Some developing countries, a huge amount of the population relies on traditional practitioners and their armamentarium of medicinal plants in order to meet healthcare requirements. Though modern medicine may exist side-by-side with such traditional practice, herbal medicines have often maintained their popularity for historical and cultural reasons. (Vishwakarma *et al.*, 2013). Natural products have played a vital role right through the world in treating and preventing human ailments. Natural product medicines have come from various source resources including terrestrial plants, terrestrial microorganisms, marine organisms, and terrestrial vertebrates and invertebrates (Newman *et al.*, 2000) and its importance in current medicine has been discussed in different reviews and reports (Jones *et al.*, 2006).

2. MATERIALS AND METHODS

Medicinal plants were collected according to the method adopted by Schltes (1960); Jain (1981) and Martin (1995). Extensive field trips were conducted to remote rural settlements. From each hamlet, three or more than three local herbal healers were interviewed in order to obtain information about plant products which used to cure various infectious diseases. Here both men and women medicinal healers were asked to explore their view on the utilization of medicinal plants. However, the men

medicinal healers have given more priority because they seemed to have more knowledge about the utility plants in curing various diseases. They know more about remedies for children, disease, and ailments associated with heart and body pain. Men new more about the treatment of bone fracture, cuts, wounds, scorpion and snake bites. The traditional healers (informants) were taken to the field and record of medicinal plants is made. The informants were requested to explain the medicinal properties, vernacular name, preparation method, and mode of administration. All the above said information was recorded on time.

3. RESULT

3.1. Taxonomic Diversity

In the present study, 55 medicinal plants belonging to 49 genera of 31 families used by Pulaya communities were collected and studied after carrying out a simple interview. The plants were collected from various conservancies around the study area and witnessed with photographs. Different parts were harvested depending on the parts the community used in the treatment of the range of diseases. According to the investigation among the plant parts, the leaves and fruits are mostly used than other parts of the plants. Most of the phytomedicine from this region was used to treat cough, cold, dysentery, fever and other viral, bacterial and protozoan diseases.

The families of Solanaceae and Euphorbiaceae comprises highest number of species contain 7 (12%) and 5 (9%) species respectively.

3.2. Interview with Traditional Healers (Informant Selection)

There were 50 elder's from Pulaya tribes were involved. From each hamlet 10 informants (5 men and 5 women) were selected, the age of informants ranged from 25- 80 with an average 52 years for men and 51 years for women. Most of the selected informant belonging to those who have strong knowledge about the use of folk medicine. About 25 (50 %) informants utilized medicinal plants and prepared only when required for them.16 (32%) informants not only utilized for themselves when required but also prepared for other people. Nearly 4 (8%) persons are regular practitioners and treated as professional as they treat patients in full time and the remaining 5 (10%) informants said that they do not utilize plant species.

3.3. Morphological Parts used, Habit, Distribution and Ailment Category

A. Morphological Parts used

Different plant parts such as leaf, root, barks, rhizome, flowers, shoot, fruit, and whole plant are used to treat different ailments. Leaves are used in the majority of cases with 34 species followed by fruit and seed with 15 species, the use of whole plant 7 species, bark and flower with 5 species each, the use of root is 4 species and others 2 species (Table 1 & fig 1)

Table1. Morphological Parts Used for Ailments

S.N	Plant Parts used	Number of species	Expression in Percentages
1	Whole plants	7	12.7
2	Bulb, tuber, and rhizome	2	3.6
3	Root	4	7.2
5	Leaf	34	61
6	Fruit and seed	15	27
7	Bark	5	9
8	Flower	5	9

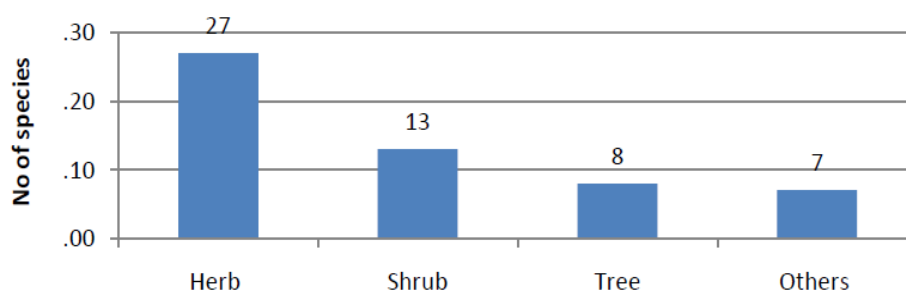


Figure1. Distribution under different forms of habit

B. Medicinal Plant Distribution in Terms of Habit

In terms of plant habits, herbs with 27 (49.%) species constitute the largest number of species followed by shrubs with 13 (23.6%) species, trees and other used 8 (14.5%) and 7 (12.7%) respectively (Table 2 & fig 2)

Table2. *Distribution under different forms of habit*

S.N	Habit	Number of Species	Percentage
1.	Herbs	27	49
2	Shrubs	13	23.8
3	Tree	8	14.5
4	Other	7	12.7
5	Total	55	100

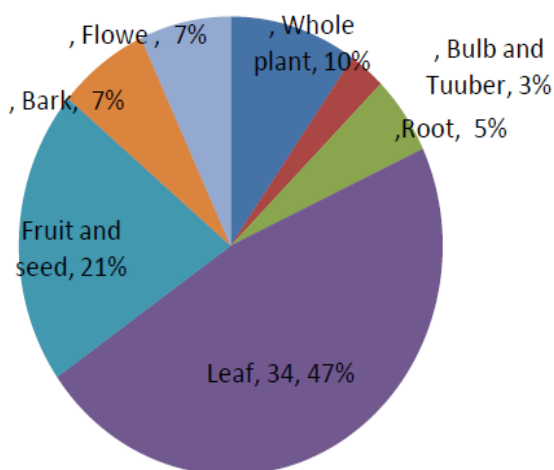


Figure2. *Plant parts used for the various ailments*

3.4. Documentation of Ethnomedicinal Medicinal Plants

1. Acacia dealbata Link.

Family : Mimosaceae
 Common Name : Eng-Beng ; Hindi-Ritha ; Tamil- Syakai .
 Parts used : Fruit and leaves
 Used by Pulaya : Fruit paste applied to all over the body to cure skin disease and itching. Leaf paste applied to head and body for cooling effect.

2. Acalypha indica L

Family : Euphorbiaceae
 Common Name : Eng-Birch-leaved acalypha ; Tamil- kuppai meni
 Parts used : Leaves
 Used by Pulaya : Leaf past applied for the skin burn, scabs

3. Achilla millefolium L

Family : Asteraceae
 Common Name : Eng-Yarrow Milfolia; Tamil- Syakai
 Morphological parts used : Leaves and flowers
 Used by Pulaya : The herbal infusion is used for diarrhea, menstrual disorder, cold and fever. Leave past applied to treat skin rashes and eczema.

4. *Adathoda vasica* Ness

Family	: Acanthaceae
Common Name	: Eng-Malbar nut ; Tamil- Arusha ; Hindi-Adusogi
Parts used	: Leaves, bark and root
Used by Pulaya	: Dried leaf powder or leaf decoction used an herbal treatment for Asthma, cough, cold and other respiratory disorder. Juice made from leaves used in the treatment of diarrhea, dysentery and cough .

5. *Chlorophytum cosmosum* Thunb. Jacques

Family	: Liliaceae
Common Name	: Eng- spider plant; Hindi-Musli
Parts used	: Root
Used by Pulaya	: Root paste along with honey or green leaf tea taken to reduce cholesterol (LDL). This infusion also used to treat diabetes. Leaf paste along with tea or honey taken to reduce body heat.

6. *Aloe vera* L

Family	: Liliaceae
Common Name	: Eng- Indian aloe; Tam- Sothu kathalai; Hindi - Gheeku
Parts used	: Leaves
Used by Pulaya	: Leaf and root extract is used for digestion, skin disease, mucilage is used for inflammation.

7. *Alternanthera pungens* Kunth

Family	: Amaranthaceae
Common Name	: Eng- Khaki weed; Tamil- Ottara mul
Parts used	: Leaves
Used by Pulaya	: The leaves are made into paste and applied over the boils for early ripening and bursting.

8. *Andrographis paniculata* Ness

Family	: Acanthaceae
Common Name	: Eng-Great king of bitters: Tamil- Nelavembu ; Hindi- Piyaz
Parts used	: Leaves and bulbs
Used by Pulaya	: The whole plant is made into paste and applied all over the body and given orally as an antidote for snakebite. Green leaves used for reliving constipation.

9. *Argemone mexicana* L

Family	: Papavaraceae
Common Name	: Eng- prickly poppy; Hind- Sathya; Tamil Bharmathand
Parts used	: Whole plant
Used by Pulaya	: Whole plant ground and made in to paste, which is applied to skin to treat skin disease, scorpion bite scabies and skin leshmania

10. Bambusa bambos L. Voss

Family : Poaceae.
Common Name : Eng- Bamboo; Tamil- Moongil
Parts used : Leaves bark and seed.
Used by Pulaya : Young stem and tender shoot used for bone setting and bone fracture.

11. Berberis tinctoria Lesch

Family : Berberdiaceae.
Common Name : Eng- Nilgiri berberry,
Parts used : Leaves and fruit.
Uses by Pulaya : It is used in the disorder of jaundice, ulcer, urinal infection, and stomachache

12. Casia auriculata L

Family : Ceasalpinaceae
Common Name : Eng- Tanners cassia, Tam- Avaram
Parts used : Flower and leaves.
Used by Pulaya : Dried leaves powder used to treat diabetes and plant serves as major source of alkaloid

13. Casia occidentalis Link

Family : Ceasalpinaceae
Common Name : Eng- Foetid cassia, Tam- Nattam thakarai
Parts used : Root and leaves.
Used by Pulaya : Leaf paste applied externally all over the body to relieve any kind of inflammation.

14. Chenopodium ambrosioides L. Mosyakin

Family : Chenopodiaceae
Common Name : Eng- Mexican tea, Hindi-Khatua, Tam- Katta sambadam
Parts used : Leaves.
Used by Pulaya : Crushed leaf paste mixed and taken for stomachache.

15. Cinchona officinalis Linn

Family : Rubiaceae
Common Name : Eng- yellow cinchona, Hindi-cinchona, Tam- chincona
Parts used : Leaf and bark
Used by Pulaya : Cinchona tonic prepared from cinchona bark used to treat fever, stomachache, vomiting and headache

16. Cissus quadrangularis L

Family : Vitaceae
Common Name : Eng - Hadjor , Hindi - Hadjora, Tam- Pirandai
Parts used : Whole plant
Used by Pulaya : The root paste is applied for the cuts and wounds for rapid healing. Leaf infusion used to reduce fever and pain

17. Cochleria armoracia/ Armoracia rusticana Gaertn. B. Mey & Scherb

Family : Brassicaceae
Common Name : Eng- Hourse radish
Parts used : Leaf and root
Used by Pulaya : Boiled leaf taken internally to cure cough and ulcer. Root decoction used for treatment of asthma.

18. Coronopus didynamous. L

Family : Brassicaceae
Common Name : Eng- Lesser swine's
Morphological parts used : Whole plant
Used by Pulaya : Young plant is crushed and applied on the fore head to relieve headache. Paste used for cuts and wounds.

19. Crotolaria verrusoca Linn

Family : Fabaceae
Common Name : Eng-Hemp; Hindi-Bansana; Tam-Perya Salangai chedi
Parts used : Leaf, flower
Used by Pulaya : Leaf infusion along with milk given to patient to treat Diarrhea and eye infection.

20. Cymbopogan confetiflorus L

Family : Poaceae
Common Name : Eng- Lemon grass ,
Parts used : Leaf and shoot
Used by Pulaya : Leaf past is made to tea to remedy digestive problem diarrhea and stomachache. It relaxes the muscles of stomach and gut.

21. Cytisus scoparius L

Family : Fabaceae
Common Name : Eng- Scotch broom. ,
Parts used : Flower and seed
Used by Pulaya : It is a diuretic and stimulates urine formation. The young herbaceous tips of flowering shoots are cardio tonic, cathartic, and emetic.

22. Dodonea viscosa L

Family : Sapinndaceae
Common Name : Eng- Hop bush; Hindi- Aliar; Tam- Velari
Parts used : Leaves.
Used by Pulaya : Leaves slightly warmed over the fire and placed on forehead to relieve headache. In addition, it is used for joint pain and bone fracture.

23. Drymaria cordata L

Family : Caryophyllaceae
Common Name : Eng- Chick weed
Parts used : Leaves.
Used by Pulaya : infusion of the leaves or whole plant is used as a treatment for jaundice, colds, biliousness, and malaria

24. *Elaeocarpus serratus* L

Family : Elaeocarpaceae
Common Name : Eng- Wild olive/ Nilgiri olive
Parts used : Leaves and fruit.
Used by Pulaya : Leaf infusion is used in the treatment of rheumatism and are an antidote to poison. Fruits are used in dysentery and diarrhea.

25. *Eleagnus kologa* L

Family : Eleagnaceae
Common Name : Eng- Oleaster
Parts used : Flowers and fruits.
Used by Pulaya : The flowers are astringent and cardiac. The fruit is astringent and rich in vitamins, minerals and contain antioxidant properties

26. *Emblica officinalis* L

Family :Euphorbiaceae
Common Name : Eng- Goose berry; Hindi- amla; Tam- Nellikai
Parts used : Bark, leaves and fruits.
Used by Pulaya : Taking one or two fruit daily improves vision, regulate blood pressure,. reduces the respiratory disorder and promotes digestion and urine formation

27. *Ficus racemosa* Linn

Family : Moraceae
Common Name : Eng- Cluster fig, Hindi- Gular; Tam- Athi.
Parts used : Latex, leaves and fruits.
Used by Pulaya : The dried un ripened fruit made in to fine powder and mixed with either milk or honey. This mixture used to treat haematuria and menorrhagia.

28. *Ficus exasperata* Linn

Family : Moraceae
Common Name : Eng- Sand paper tree, Hindi- Pipal; Tam- Athi.
Parts used : Leaves and fruits.
Used by Pulaya. : Un ripened fruit is well ground and made in to powder for making soup. Soup given once in a week for purification of blood.

29. *Fluggea leucorpyros* Willd

Family : Euphorbiaceae
Common Name : Eng- Bush weed; Hindi- Shinar; Tam- Mullu pulatti
Parts used : Fowers and fruits.
Used by Pulaya : latex of this plant species applied on open woond, scar and cuts for rapid recovery.

30. *Fragaria vesca* L

Family : Roaceae
Common Name : Eng- Wild strawberry
Parts used : leaves and fruits.
Used by Pulaya: An infusion of the leaves and tea or honey mixture cures anemia and nervousness. Fruit contain high antioxidants

31. Ipomeia nil L

Family : Convolvulaceae
Common Name : Morning glowry; Tam- siruthalai
Parts used : Leaves
Used by Pulaya : It is used in the treatment of fever, oedema, oliguria, ascariasis and constipation. Seed contain small amount of hallucinogen, which cures various. mental disorder

32. Jatropha curcus L

Family : Euphorbiaceae
Common Name : Eng- Purging nut; Tam- Kattamanakku
Parts used : Tender stick and latex.
Used by Pulaya : The tender stick used as toothbrush for dental and bleeding gum problem. Daily once in the morning for three days.

33. Jatropha gossypifolia Lag

Family : Euphorbiaceae
Common Name : Eng- Belly ache bush; Tam- Eli amanakku
Parts used : Leaves and tender shoot
Used by Pulaya : Both Thoriya and Baduga community use this plant leaves for the treatment of leprosy. And its sap used as antidote for the snake bite.

34. Leucas aspera Wild

Family : Lamiaceae
Common Name : Eng- leucas or Gumo; Tam- Thumbai
Parts used : Leaves
Used by Pulaya : Leaf infusion used to treat skin allergy, toothache and small pox.

35. Leucas lavandulifolia Sm

Family : Lamiaceae
Common Name : Eng- Gumo ; Tam- Thumbai
Parts used : Leaves .
Used by Pulaya : Leaves are mixed with jiggery and made in to Past and given orally to the children suffering from Cold and Cough.

36. Laurus nobilis L

Family : Lauraceae
Common Name : Eng- Sweet bay
Parts used : Leaves and fruits.
Used by Pulaya : Leaf infusions are reputed to soothe the stomach and relieve pain and flatulence.

37. Mahonia leschenaultia Wall. ex Wt

Family : Berberdiae
Common Name : Eng- Mahonia/ Takida
Parts used : Leaves stem
Uses: by Badagas : Infusion of leaves commonly used against swelling, fever, inflammation, jaundice, and dysentery.

38. Melaleuca alternifolia Maiden. Betche

Family : Myrtaceae.
Common Name : Eng- Narrow leaved paper bark/ narrow leaved tea tree.
Parts used : Leaves, young shoot
Used by Pulaya : Leaf infusion used externally to treat stings, burns, wounds, skin infection, warts and vaginal infection.

39. Mentha arvensis L

Family : Lamiaceae.
Common Name : Eng- Japanese mint.
Parts used : Leaves,
Used by Pulaya : Oil obtained from tea tree is strongly antiseptic and diaphoretic. Leaf infusion used for the mouth fresh and cough.

40. Nicanra physaloides. L

Family : Solanaceae.
Common Name : Eng-Shoofly / Apple of Peru; Tam- Sudaku thakkalli
Parts used : Leaves
Used by Pulaya : Leaf paste applied to the skin to cure cuts and wounds.

41. Osimum basilicum L

Family : Lamiaceae.
Common Name : Eng-Shrubby Basil; Tam- KarunThulasi .
Parts used : Leaves,
Used by Pulaya : Leaf juice given orally (one tea spoon) to children to cure cold and bronchitis. Leaf infusion also used for blood purification.

42. Passiflora caerulea L

Family : Passifloraceae.
Common Name : Eng- Blue Passion fruit ; Hindi- Jhumka lata..
Parts used : Leaves, fruit
Used by Pulaya : Leaf infusion used in the treatment of insomnia and headache.

43. Phyllanthus amarus Schum. Thonn

Family : Euphorbiaceae
Common Name : Tam- keezanalli :.
Parts used : Whole plant,
Used by Pulaya : Handful of leaves is made into a paste and mixed with goat milk. It is given orally to treat jaundice.

44. Plumeria alba L

Family : Apocynaceae
Common Name : Eng- White champa ; Tam-Perumal arali
Parts used : Stem Bark
Used by Pulaya : The stem bark is made into a paste with dry chilli and applied on the forehead to cure migraine.

45. *Rubia cordifolia* Linn

Family : Rubiaceae
Common Name : Eng- Indian madar Castor ;Tam- Savalikodi
Parts used : Whole plant.
Used by Pulaya : The whole plant made into paste and applied to skin to cure skin diseases.
Daily once for five days or until cure. Leaf paste kept on eyelid to cure eye infection.

46. *Siegesbeckia orientalis* L

Family : Asteraceae
Common Name : Eng- Siegesbekia; Tam- Kadambu
Parts used : Leaves
Used by Pulaya : Leaves paste applied all over the body to cure skin disease.

47. *Solanum anguvi* L

Family : Solanaceae
Common Name : Eng- Night shade; Tam- Kattu sundai
Parts used : Fruit and leaves
Used by Pulaya : The Fruits are used fresh or dried and ground in to powder and mixed with milk. Milk given orally to reduce Blood pressure and dysentery.

48. *Solanum elaeagnifolium* L

Family : Solanaceae
Common Name : Eng- Silver leaf Nightshade; Tam-
Parts used : Fruit and leaves
Used by Pulaya : The Fruits and leaves well ground and made into paste and taken orally to cure tooth aches, sore throats and also used for snake bite.

49. *Solanum sisymbriifolium* L

Family : Solanaceae
Common Name : Eng- Night shade; Tam- Aamanakku /Kotta muthu
Parts used : Fruit and seed
Used by Pulaya : The Fruits are used fresh or dried and ground in to powder and mixed with milk. Milk given orally to reduce Blood pressure.

50. *Solanum torvum* L

Family : Solanaceae
Common Name : Eng- prickly nightshade/ Turkey berry; Tam- Sundakaa
Parts used : Fruit
Used by Pulaya : The immature green fruits are made in to a paste and given orally to children as a febrifuge. Daily once in the morning for five days.

51. *Solanum trilobitum* L

Family : Solanaceae
Common Name : Eng- prickly night shade/ Turkey berry ;Tam-Tudhuvali
Parts used : Fruit
Used by Pulaya : The immature green fruits are made in to a paste and given orally to children as a febrifuge, dysentery, cough.

52. Solanum viarum L

Family : Solanaceae
Common Name : Eng- tropical soda apple
Parts used : Leaves.
Used by Pulaya : The leaf and fruit decoction used for the treatment of rheumatic arthritis, asthma, leukemia and obesity.

53. Taraxacum officinale Webbre

Family : Asteraceae.
Common Name : Eng- Dandelion; Hindi- Dulal kanphal.
Parts used : Fruit
Used by Pulaya : The entire plant decoction is used to cure dyspepsia and digestive problem. Leaf decoction consumed orally to promote appetite.

54. Viola odorata L

Family : Violaceae
Common Name : Eng- sweet violet
Parts used : Leaves.
Used by Pulaya : Leaf infusion taken internally to cure sore throat, cough, tonsillitis and asthma.

55. Zingiber officinale Roscoe

Family : Zingibaraceae
Common Name : Eng- ginger ;Tam- Ingi; Hindi- Ada
Parts used : Rhizome.
Used by Pulay : A bit of fresh rhizome is bitten by the achy tooth to relieve toothache and gastric trouble. Daily twice for three days or until it is cured

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