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Floristic survey of traditional herbal medicinal plants for treatments of various diseases from coastal diversity in Pudhukkottai District, Tamilnadu, India

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PEER REVIEW

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Comments

The authors have gathered some useful information on the Flora of Traditional Herbal Medicinal Plants used in Pudhukkottai District, Tamilnadu, India.

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ABSTRACT

Objective: To conduct ethno medicinal survey in coastal plant species in Pudhukkottai district and collect information on medicinal plants used for the treatment of various diseases such as pneumonia, asthma, rheumatism, piles, diarrhea, skin diseases, spleen diseases and several other ailments.

Methods: The study was conducted during November 2012 to April 2013 by visiting regularly fishery communities and local peoples with the help of interviews. Traditional herbal medicine information was collected as per the described methods.

Results: A total of 52 plant species representing 31 families have been reported. Of the 52 plant species, 28 were herbs, 8 trees, 8 climbers, 7 shrubs and one species of aquatic creeper.

Conclusions: The study revealed that local communities and fishery communities have a great faith in the traditional healing system and they rely on medicinal plants for treatment of various diseases. Now, the coastal plants have been extensively modified by human activity. Further studies on phytochemistry, pharmacology and pharmacognosy on these species may lead to the invention of novel bioactive compounds to treat pathogenic diseases. Due to continuous loss of coastal vegetation, the associated indigenous knowledge is also gradually disappearing. So, it is imperative to protect and restore the coastal vegetation, as an immediate priority.

KEYWORDS

Coastal vegetation, Medicinal plants, Ethno botany, Traditional knowledge

1. Introduction

From ancient times, plants have been used for curing several ailments of mankind and pet animals. Even today with advancement of allopathic medicine, tribal people and rural population are still dependent on the herbs and plants of medicinal interest. Some reports revealed that more than 80% of the world population rely on herbal and traditional medicine^[1,2]. It was estimated that 2500 plant

species have been utilized for medicinal purposes and more than 6000 plants are widely used in folk and herbal medicine^[3]. Ethnobotanical expeditions are necessary for the progress of the tribal welfare. The world is endowed with a rich wealth of medicinal plants. These plants are a local heritage with global importance. It is estimated that around 70000 plant species from lichens to flowering trees, have been used at one time or other for medicinal purposes. It is estimated that 64%–84% of world's population depends

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on traditional medicine^[4,5]. Traditional knowledge forms the basis for innovations of novel drugs for the benefit of the humanity. Several workers have been working on ethno medicinal plants from Indian coastal regions^[6–14]. In such a way, the present work was carried out to explore the medical remedies of some medicinal plants used by the rural people living in Pudhukkottai district, Tamilnadu, India. The present study information was gathered from the local and fisher people of Indian coastal regions regarding the applications of traditional herbal medicines from various plant species as medicinal remedy for the first time.

2. Materials and methods

The present study was conducted at several coastal villages of Pudhukkottai district in Tamilnadu, India (Figure 1).

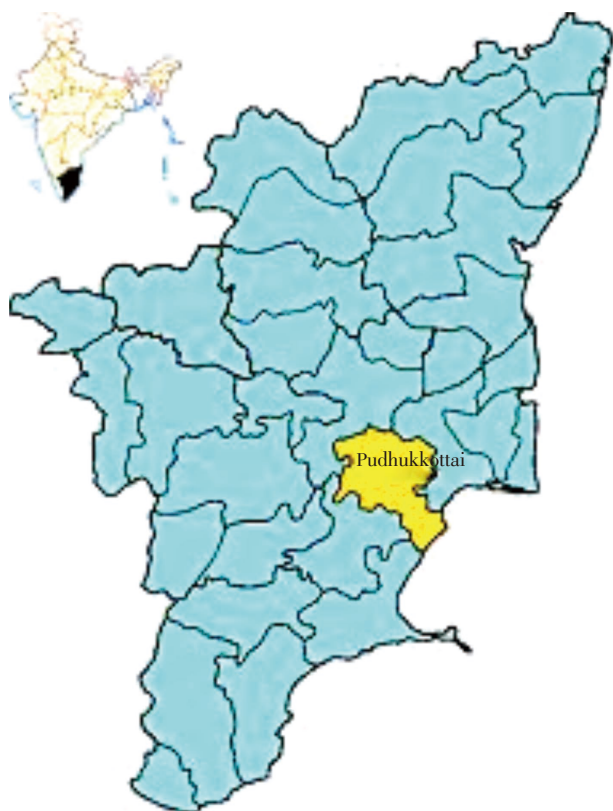


Figure 1. Study areas at several coastal villages of Pudhukkottai district in Tamilnadu, India.

The Pudhukkottai district is covered with a combination of ecosystem including scrub jungles, aquatic vegetation, coastal vegetation and terrestrial vegetation from Palk Strait, south east coast, Tamilnadu. Medicinal plants survey from the local peoples from Pudhukkottai coastal environments was undertaken during November 2012 to April 2013. Traditional herbal medicine information was collected as per the described methods^[15,16]. The information was collected from fishery communities and local peoples with

the help of interviews. During the survey, 50 local fisherman communities belonging to the age group of 45 to 65 years were interviewed. Amongst the informants, ten were traditional medicine practitioner in different villages. Data collection through structured questionnaire with flexibility of question was prepared to collect all possible information on traditional medicine preparation, application among the Pudhukkottai Traditional Medicines. Samples of such plants were collected, identified with the help of flora of Gulf of Mannar and flora of the Tamilnadu carnatic^[17,18]. Survey of coastal fishery communities and the local people showed that they are widely distributed in Jakatha Pattinam, Kottaipattinam, Ammapattinam, Mimisal and Tirupunavasal areas, since the period of investigation was only 6 months, the present ethnomedicinal studies with reference to the coastal area of Pudhukkottai district, South east coast, Tamilnadu. A literature survey was carried out for compilation of existing information on various uses of the coastal environment plant species in different areas. At the time of field survey, data were collected on the indigenous uses of coastal plant species by the fishery communities and local community.

3. Results

The surveyed ethno medicinal plants are enumerated alphabetically with their botanical name, family name, vernacular name, habit and their ethno medicinal values from 52 members belonging to 31 families which are used by fishery communities and local peoples in study area Pudhukkottai District, Tamilnadu (Table 1).

3.1. *Abutilon indicum* L.

Medicinal properties: Root extract is taken orally twice a day for two weeks to treat vomiting, leucorrhoea and menorrhagia.

Useful parts: Leaves, root and fruits.

3.2. *Acalypha indica*

Medicinal properties: It's used for treating pneumonia, asthma, rheumatism and several other ailments. The juice extracted from the leaves, mixed with lime is applied on skin to cure diseases caused by ringworm. Fresh juice of leaves mixed with oil and salt is used for rheumatoid, arthritis and to cure scabies. Powdered leaves are used to cure bedsores and infected wounds. The paste of the leaves can be applied to burns.

Useful part: Leaves.

Table 1

Medicinal plants in the coastal area of the Pudhukkottai district.

| Plant names | Family | Local name | Habit |
|--|-----------------|-----------------------|-----------------|
| <i>Abutilon indicum</i> L. | Malvaceae | Thuthi | Herb |
| <i>Acalypha indica</i> L. | Euphorbiaceae | Kuppaimeni | Herb |
| <i>Achyranthus aspera</i> L. | Amaranthaceae | Nayuruvi | Herb |
| <i>Aerva lanata</i> (L.) Juss. | Amaranthaceae | Sirukanpeelai | Herb |
| <i>Alternanthera sessilis</i> R.Br. | Amaranthaceae | Ponnanganni | Herb |
| <i>Amaranthus spinosus</i> L. | Amaranthaceae | Mullikeerai | Herb |
| <i>Argemone Mexicana</i> L. | Papaveraceae | Birammathandu | Herb |
| <i>Asparagus racemosus</i> Willd. | Liliaceae | Tannir vittan | Climber |
| <i>Avicennia officinalis</i> L. | Acanthaceae | Alaiyathi | Tree |
| <i>Boerhavia diffusa</i> L. | Nyctaginaceae | Padarmookirattai | Herb |
| <i>Boerhavia erecta</i> L. | Nyctaginaceae | Mookirattai | Herb |
| <i>Calophyllum inophyllum</i> L. | Casuarinaceae | Punnai | Tree |
| <i>Cardiospermum halicacabum</i> L. | Sapindaceae | Mudakkathan | Climber |
| <i>Cassia tora</i> L. | Caesalpiniaceae | Oosithagarai | Herb |
| <i>Cissus quadrangularis</i> L. | Vitaceae | Pirandai | Climber |
| <i>Cledodendron inerme</i> (L.) Gaertn | Verbenaceae | Peechalathi | Shrub |
| <i>Cleome gynandra</i> L. | Capparidaceae | Nallavelai | Herb |
| <i>Coccinia grandis</i> L. | Cucurbitaceae | Kovai | Climber |
| <i>Crotalaria verrucosa</i> L. | Fabaceae | Kilukiluppai | Herb |
| <i>Cynodon dactylon</i> (L.) Pers. | Poaceae | Arugampul | Herb |
| <i>Cyperus rotundus</i> L. | Cyperaceae | Korai | Herb |
| <i>Datura metel</i> L. | Solanaceae | Oomathai | Herb |
| <i>Desmodium triflorum</i> (L.) DC. | Fabaceae | Sirupulladi | Herb |
| <i>Eclipta prostrata</i> L. | Asteraceae | Karisalankanni | Herb |
| <i>Euphorbia hirta</i> L. | Euphorbiaceae | Amman pacharasi | Herb |
| <i>Evolvulus alsinoides</i> L., | Convolvulaceae | Vishnu karanthai | Herb |
| <i>Hemidesmus indicus</i> (L.) R.Br. | Asclepidaceae | Nannari | Climber |
| <i>Hibiscus tiliaceus</i> L. | Malvaceae | Neerparuthi | Shrub |
| <i>Hygrophila auriculata</i> (Schum.) Heine | Acanthaceae | Neermulli | Shrub |
| <i>Ipomoea aquatica</i> Forsskal | Convolvulaceae | Veelikeerai | Climber/creeper |
| <i>Ipomoea pes-caprae</i> (L.) Sweet | Convolvulaceae | Atappan kolai | Climber |
| <i>Jatropha gossypifolia</i> L. | Euphorbiaceae | Kattamanakku | Shrub |
| <i>Leucis aspera</i> (Willd.) Link | Lamiaceae | Thumbai | Herb |
| <i>Marsilea quadrifolia</i> L. | Marsiaceae | Araakeerai | Aquatic creeper |
| <i>Mimosa pudica</i> L. | Mimosaceae | Thottal sinungi | Herb |
| <i>Oldenlandia umbellata</i> L. | Rubiaceae | Muthkkaasu | Herb |
| <i>Phyla nodiflora</i> (L.) Greene | Verbenaceae | Koduppai | Herb |
| <i>Physalis minima</i> L. | Solanaceae | Tottakkalai | Herb |
| <i>Pongamia pinnata</i> (L.) Pierre | Fabaceae | Pungamaram | Tree |
| <i>Rhizophora apiculata</i> BL. | Rhizophoraceae | Surapunnai | Tree |
| <i>Rhizophora mucronata</i> Poir | Rhizophoraceae | Kandal | Tree |
| <i>Sida cordifolia</i> L. | Malvaceae | Palampasi | Herb |
| <i>Suaeda monoica</i> Forssk.ex.Scop | Chenopodiaceae | Umari | Shrub |
| <i>Tamarindus indica</i> L. | Caesalpiniaceae | Puli | Tree |
| <i>Tephrosia purpurea</i> (L.) Pers. | Moringaceae | Kolinchi | Shrub |
| <i>Terminalia catappa</i> L. | Combretaceae | Nattu vathamaram | Tree |
| <i>Thespesia populnea</i> (L.) Soland ex.Corr. | Malvaceae | Poovarasu | Tree |
| <i>Tinospora cordifolia</i> Miers | Menispermaceae | Seendhil | Climber |
| <i>Tridax procumbens</i> L. | Asteraceae | Thathaapoochedi | Herb |
| <i>Vernonia cinerea</i> L. | Asteraceae | Sirudhevi sengeluneer | Herb |
| <i>Vitex negundo</i> L. | Verbenaceae | Nochi | Shrub |
| <i>Ziziphus mauritiana</i> Lam | Rhamnaceae | Elanthai | Shrub or tree |

3.3. *Achyranthus aspera* L.

Medicinal properties: The whole plant is used to treat night blindness, eye problems. The root, seed and leaf are used in the form of juice and powder to treat excessive hunger, piles, calculi, wound, difficult labor and sinus, wound due to accident, eye diseases, ear diseases, diseases pertaining to head, dog-bite, abdominal pain, jaundice, insomnia and pain in vagina. Pinch of root powder in combination with pepper and honey is given to treat cough, powdered roots mixed with honey are given orally. The flowering spike ground to make paste and used as an external application in

poisonous insect bites.

Useful part: Whole plant.

3.4. *Aerva lanata* (L.) Juss.

Medicinal properties: Root decoction is taken orally in empty stomach once a day for one month to cure diabetes.

Useful part: Root.

3.5. *Alternanthera sessilis* R.Br.

Medicinal properties: The whole plant is used to treat diarrhea, skin disease, dyspepsia, hemorrhoids, liver and spleen diseases and fever.

Useful part: Whole plant.

3.6. *Amaranthus spinosus* L.

Medicinal uses: The plant is astringent, diaphoretic, diuretic, emollient and febrifuge. It is used internally in the treatment of internal bleeding, diarrhea and excessive menstruation. It is also used in the treatment of snake bites. Externally, it is used to treat ulcerated mouths, vaginal discharges, nosebleeds and wounds. The plant can be used fresh or it can also be harvested when coming into flower and dried for later use. The root is emmenagogue and galactagogue. It is used in the treatment of gonorrhoea, eczema and colic. The seed is used as a poultice for broken bones.

Useful part: Leaves, root and stems.

3.7. *Argemone mexicana* L.

Medicinal uses: The plant cures vitiated pita, guinea-worm infestation, skin diseases, itching, inflammations, all types of poisoning, constipation, flatulence, colic, malarial fever and vesicular calculus.

Useful part: Whole plant.

3.8. *Asparagus racemosus* Willd.

Medicinal uses: The roots are useful in nervous disorders, dyspepsia, tumors, scalding of urine, throat infections, tuberculosis, cough bronchitis and general debility. It helps with nervousness, pain, restless sleep, disturbing dreams and people with weak emotional and physical heart. The herb is useful for treating anorexia, insomnia, hyperactive children and people who are under-weight.

Useful part: Root.

3.9. *Avicennia officinalis* L.

Medicinal uses: The plant is used to treat vitiated pita, inflammation, diarrhea, dysentery, leucorrhoea, wounds, boils, and viral infections. Plant has aphrodisiac property.

Useful part: Leaves and bark.

3.10. *Boerhavia diffusa* L.

Medicinal uses: It is believed to improve and protect eye sight. The plant has diuretic properties and is used by diabetics to lower blood sugar.

Useful part: Roots, leaves and seeds.

3.11. *Boerhavia erecta* L.

Medicinal uses: The root is used as a diuretic to treat jaundice, enlarged spleen, gonorrhoea and other internal inflammations. It is also used as stomachic, cardio tonic, hepatic protective, laxative, anthelmintic (expels parasitic worms), febrifuge (reduces fever), and an expectorant. A paste of the roots is rubbed on the skin to ripen abscesses and ulcers.

Useful part: Root.

3.12. *Calophyllum inophyllum* L.

Medicinal uses: Plant pacifies vitiated vata, pita, arthritis, ulcers, skin diseases, purities, migraine and urinary retention,

Useful part: Barks, leaves and seeds.

3.13. *Cardiospermum halicacabum* L.

Medicinal properties: The oil prepared from the leaves acts as a very effective external application for arthritis and other painful conditions of the body. Two to three drops of juice of the leaves can be used as an ear drops for ear ache, purulent discharge from ears. The leaves can be crushed well, ground and applied over the lower abdomen of the delivered woman. This helps in expulsion of waste products out of the uterus. For dandruff, the leaves are soaked in water and then crushed well. This water is used in cleaning hairs. The oil prepared from the paste of the leaves and gingili oil can be used as a hair tonic and cure for dandruff.

Useful part: Leaves.

3.14. *Cassia tora* L.

Medicinal uses: Skin diseases, dandruff, constipation, cough, hepatitis, fever, and hemorrhoids.

Useful part: Leaves, seeds.

3.15. *Cissus quadrangularis* L.

Medicinal properties: The stem of the plant is used to bandage the part of body subjected to fracture or any bone injury. The oil prepared from juice of this plant and gingili

oil is externally applied over fractured part. The stem and leaf of plant is ground and the extracted juice along with equal quantity of honey is given in dose of 15–30 mL for irregular menstruation.

Any disorders of ear like pus discharge or ear ache, can be cured by heating the stem in little flame extracting the juice and using it as ear drops.

Useful part: Stem, leaf.

3.16. *Clerodendrum inerme* (L.) Gaertn

Medicinal uses: It contains anti-microbial activity and cures skin infections. It is used in ayurveda, folk and siddha. Leaves are used for removing pain and in jaundice. Leaf extract and paste are used in the treatment of malaria, infected wounds, inflammation and itching skin diseases.

Useful part: Leaves.

3.17. *Cleome gynandra* L.

Medicinal uses: Leaf paste is applied twice a day for wound until cure.

Useful part: Leaves.

3.18. *Coccinia grandis* L.

Medicinal uses: Leaf juice is taken orally twice a day for 2 d to cure fever.

Useful part: Root, fruit, leaves.

3.19. *Crotalaria verrucosa* L.

Medicinal uses: Bark of the roots is peeled, ground with rice water and administered orally. Root paste is applied on wounds and bites. Seed decoction is used in treating poison of saw scaled viper. Leaves are used to cure scabies and impetigo.

Useful part: Leaves.

3.20. *Cyanodan dactylon* (L) Pers.

Medicinal uses: Leaf extract is taken thrice a day to reduce the body heat. It possesses antimicrobial and antiviral properties, as well as treatment of urinary tract infections, syphilis and dysentery. It helps in the treatment of diabetes. It is collected freshly and juice of this grass is useful to cure blood vomiting.

Useful part: Leaves.

3.21. *Cyperus rotundus* L.

Medicinal uses: Tuber paste is applied twice a day for two d to cure stomach ache.

Useful part: Tuber.

3.22. *Datura metel L.*

Medicinal uses: Dried leaf powder is smoked as cigarette twice a day for 2–3 weeks to get relief from asthma. Fruit juice with oil is applied to check hair falling.

Useful part: Whole plant.

3.23. *Desmodium triflorum (L.) DC.*

Medicinal uses: Decoction of leaves is taken orally along with 100 mL of milk twice a day for two weeks to cure piles.

Useful part: Whole plant.

3.24. *Eclipta prostrata L.*

Medicinal uses: Root paste is applied twice a day for 3 d to heal wounds.

Useful part: Whole plant.

3.25. *Euphorbia hirta L.*

Medicinal uses: Leaf extract is taken twice a day as a medicine for 2 d to cure cold and cough. The flowers and fruits were used as an ingredient of medicines for cough and asthma and also used in colic and dysentery and diarrhea. The extracts of plants are used as an ear drops and in the treatment of boils, sore and promoting wound healing. The leaves and flowers were mixed with milk used for increasing lactation.

Useful part: Leaf, flower and fruits.

3.26. *Evolvulus alsinoides L.*

Medicinal uses: Leaf paste is applied 30 min before bath for 1 month to promote the growth of hair. The leaves are used to cure asthma. It is used for anti-aging remedy, a rejuvenative for general nervous debility, and to improve memory and intellect.

Useful part: Leaves.

3.27. *Hemidesmus indicus L. R.Br.*

Medicinal uses: the plant root enjoys a status as tonic, alternative, demulcent, diaphoretic, diuretic and blood purifier. It is employed in nutritional disorders, syphilis, chronic rheumatism, gravel and other urinary diseases and skin affections. Roots used in the form of powder, infusion or decoction as syrup and ulcer of alimentary tracts.

Useful part: Roots.

3.28. *Hibiscus tiliaceus L.*

Medicinal uses: The barks and roots may be boiled

to make a cooling tea to cool fevers, congested chest, rheumatism, lumbago and in childbirth. Leaves and flowers used as laxative and resolving properties. It is also economic important for fisherman making fishing nets and light boats.

Useful part: Leaf, bark and root.

3.29. *Hygrophila auriculata (Schum.) Heine*

Medicinal uses: Root past is applied to get relief from body pain.

Useful part: Root.

3.30. *Ipomoea aquatica Forsskal*

Medicinal uses: Flower juice is applied once daily in early morning around the eye to cure black ring around the eye.

Useful part: Flower.

3.31. *Ipomoea pes-caprae (L.) Sweet.*

Medicinal uses: The whole plant used in tonic, stomach ache and diuretic. Leaves are used in external applications for rheumatism and dropsy and their juice is taken as a diuretic. Leaf paste is used to treat inflammation, skin diseases, boils, ulcers and hemorrhoids, burning sensation, swellings and wounds. Seeds are used for stomach ache and cramps.

Useful part: Leaves.

3.32. *Jatropha gossipifolia L.*

Medicinal uses: It cures cancer, paralysis, piles, snake bite, skin diseases *etc.* its fruits and foliage are toxic to humans and animals. Leaves are tied locally in treatment of guinea worm and also used as a purgative and stomach ache. Latex is used to cure ulcer. Roots are used to cure leprosy.

Useful part: Leaves, stem, bark, seeds and latex.

3.33. *Leucus aspera (Willd.) Link.*

Medicinal uses: Leaf extract is applied for twice a day for 2 d to treat painful and swellings. Five to ten flowers are eaten raw for cough and cold. The juice extracts from leaves are applied externally in psoriasis and chronic skin eruptions.

Useful part: Whole plant.

3.34. *Marsilea quadrifolia L.*

Medicinal uses: Leaves are cooked and eaten twice a day with normal diet for 2 d to cure fever.

Useful part: Leaves.

3.35. *Mimosa pudica L.*

Medicinal uses: Decoction of root is taken orally once a day

for one week to get relief from urinary complaints. Leaves are used in stop bleeding and leaves are boiled in coconut oil and applied to treat skin injury. The leaf paste is mixed with cow milk and taken orally once a day to reduce body heat or as a laxative for bowel clearance. Roots are made in powder and mixed with cow milk and used to aphrodisiac.

Useful part: Leaf, root.

3.36. *Oldenlandia umbellata* L.

Medicinal uses: Leaf extract is taken orally once a day for 3–4 weeks to get relief from asthma. Root paste is applied 1 week for bronchitis.

Useful part: Leaves.

3.37. *Phyla nodiflora* (L) Greene.

Medicinal uses: The whole plants are used as diuretic and febrifuge. Fresh plant paste or poultice is applied as apparent for boils, swollen cervical glands and chronic indolent ulcers.

Useful part: Whole parts.

3.38. *Physalis minima* L.

Medicinal uses: Leaves are used as a bitter, appetizing, tonic, diuretic, laxative and expectorant, and is useful in inflammations, enlargement of the spleen and abdominal troubles. The fruits are considered to be a tonic, diuretic and purgative.

Useful part: Leaves, fruits.

3.39. *Pongamia pinnata* (L.) Pierre

Medicinal uses: The juice and oil are extracted from whole plant used for antiseptic and also curing itch. Leaves are used to cure in cold, coughs, diarrhea, dyspepsia, gonorrhea and leprosy. Roots are used to clean teeth and ulcer. Bark is used internally for treating bleeding piles, wash wounds and skin diseases.

Useful part: Leaves, root, bark.

3.40. *Rhizophora abiculata*

Medicinal uses: The bark extract is used for diarrhea, dysentery, nausea, vomiting and amoebiasis, as antiseptic and to stop bleeding.

Useful part: Bark.

3.41. *Rhizophora mucronata* Poir

Medicinal uses: The bark extract is used for controlling

diarrhea, nausea and to stop vomiting.

Useful part: Bark.

3.42. *Sida cordifolia* L.

Medicinal uses: Leaf extract is taken twice a day in empty stomach for 2–3 d to cure dysentery.

Useful part: Leaf.

3.43. *Suaeda monoica* Forssk. ex. Scop

Medicinal uses: Root is used for treating a nasal-pharyngeal infection.

Useful part: Root.

3.44. *Tamarindus indica* L.

Medicinal uses: Leaves, fruits and seeds are used to treat skin diseases. Roots are used to treat snake bite. Bark is used for wound washing. Leaf juice, coconut oil, pepper powder are mixed and boiled with applied to treat muscle pain.

Useful part: Leaves, fruits, seeds, bark.

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

Medicinal uses: Decoction of root is given with the extract of 5 g pepper (*Piper nigrum*) for one week to cure urinary disorders. Pods are eaten to stop vomit.

Useful part: Root.

3.46. *Terminalia catappa* L.

Medicinal uses: It is used against liver diseases, dysentery and diarrhea, as an anti carcinogenic, antioxidant and anti clastogenic. Bark is used as diuretic and cardio tonic.

Useful part: Bark.

3.47. *Thespesia populnea* (L) Soland ex Corr

Medicinal uses: It is used in treating scabies, insect bites, gonorrhea, ringworm, migraine, head ache, fistula, psoriasis, scabies and sprains. Seed oil is used in skin troubles. Bark, roots and fruits are astringent, used in dysentery and hemorrhoids.

Useful part: Leaves, bark and root.

3.48. *Tinospora cordifolia* Miers

Medicinal uses: Leaf extract is taken orally with equal quantity of honey daily in the morning for jaundice until cure.

Useful part: Leaf.

3.49. *Tridax procumbens* L.

Medicinal uses: Leaf paste is applied to check hemorrhage from wounds.

Useful part: Leaf.

3.50. *Vernonia cinerea* L.

Medicinal uses: Root extract is taken twice a day for 2–4 d to treat diarrhea. Leaf juice is given to drink twice a day for cough.

Useful part: Leaf, root.

3.51. *Vitex negundo* L.

Medicinal uses: The leaves are used as anti-inflammatory, antibacterial, antifungal and analgesic and to cure bruises, injuries and sores. Fifty grams of fresh leaves are roasted with an equal quantity of sand in a hot pan. This hot mixture is administered on the forehead for relieving headache.

Useful part: Leaves.

3.52. *Ziziphus mauritiana* Lam

Medicinal uses: Ripe fruits are edible and used to purify blood and aid digestion. The fruits are taken and dried and made into powder and administered orally. Roots are used in fever, cure wounds and ulcers.

Useful part: Roots, fruits.

4. Discussion

Medicinal plants used in the modern healthcare system are, obviously, from the accumulated knowledge on folk medicine of different sources, worldwide. WHO has listed about 21 000 plant species around the world that are used in the healthcare systems^[19]. Among 60 000 flowering plants in India, about 3 000 plants are identified to be used as ethno medicine or folk medicine, and of them about 1 500 plants are used in Indian Ayurveda, Unani and Siddha system^[20]. Seven hundred more plants are investigated pharmacologically and chemically for their active principles, which are used in modern medical system.

Most of the traditional medicines were prepared by the healers from fresh materials collected from the wild. However, in some cases, sun dried stored plant materials which were collected during their availability were used. Dried plant materials were mostly powdered and used in

preparation of the medicine. The present study announced that most plant species are traditionally used by fishery communities and local peoples in Pudhukkottai district coastal regions for medicinal and daily purposes. In the study 52 species belonging to 31 families of ethno medicinally important plant species were noticed and their uses are focused. The dominant family of study area is Malvaceae and Amaranthaceae (4 species) followed by Euphorbiaceae, Verbenaceae, Fabaceae, Asteraceae and Convolvulaceae (3 species), 5 families represented by 2 species and 19 families by 1 species. As for as plant parts, the remote people use a wide variety of parts in traditional medicine. Most of these plants are being used directly by the people or to prepare decoction or with slight preparation like applying the paste, boiling the useful parts, simply chewing leaves, making extract of the plant *etc.* Some other plants are combined with some preparations. For example the whole plants are boiled together and the decoction is given for fever, cough. These simple treatments are used by hundreds of people in the rural population. Among the different plant parts used in the preparation of medicine leaves are predominantly used. The recent ethno botanical studies confirmed that leaves are the major portion of the plants used in the treatment of diseases^[21–25]. The medicinal properties of identified plants are used to cure various diseases like asthma, anemia, bronchitis, cough, cold, diabetes, diarrhea, skin diseases, jaundice, tumor inhibitors, tooth ache *etc.* The ethno medicinal plants listed above may be subjected to intensive phytochemical screening and pharmacognosy in view of their immense potential to cure certain vital diseases and ailments.

The coastal plant species of the Pudhukkottai district are tremendously important. They play a vital role in the medicinal and social life of people. Conservation and judicious utilization of this coastal plant wealth is significant because they have become threatened by over-exploitation, clearing of forest for industrialization, rapid urbanization, pisciculture, human settlements, *etc.*, the inventory of 52 medicinal plant species as used by the coastal people throws some light on the medicinal importance of these species. Hence there is a need for detailed investigations of ethno medicinal knowledge held by these local villagers before such valuable knowledge is lost forever. A rational and sustainable method of utilization can help improving the life of the local people while maintaining ecological balance of these coastal habitats.

Conflict of interest statement

We declare that we have no conflict of interest.

Comments

Background

The authors have done a floristic survey among the local people and fishery communities in the coastal district of Tamil Nadu to collect the ethnomedicinal uses of plants used by them for treating diseases.

Research frontiers

The present research carried out by the authors provided some useful information on the medicinal uses of coastal plants which are used by the fishery communities.

Related reports

The survey was conducted by the authors with standard methodologies for ethnobotany and gave some useful information.

Innovations and breakthroughs

It contributes significantly in providing information regarding the local people's knowledge on medicinal plants in the particular region in Tamil Nadu, India.

Applications

The reported plants may be further studied for the related pharmacological activities with thorough literature search and thus lead to the development of new drugs for treating diseases on the basis of local people's knowledge.

Peer review

The authors have gathered some useful information on the Flora of Traditional Herbal Medicinal Plants used in Pudukkottai District, Tamilnadu, India.

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