ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 05, pp.31016-31026, May, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

SOME ETHNOMEDICINAL USES OF PLANT SPECIES IN POOVANUR, VELUKUDI AND LAKSHMANGUDI VILLAGES OF NEEDAMANGALAM TALUK, THIRUVARUR DISTRICT

***Rekha, D., Soundari, K., Lavanya, A. and Panneerselvam, A.**

PG and Research Department of Botany & Microbiology, A.V.V.M Sri Pushpam College (Autonomous)
Poondi – 613 503, Thanjavur District

ARTICLE INFO

Article History:
Received 17th February, 2016
Received in revised form
17th March, 2016
Accepted 21st April, 2016
Published online 20th May, 2016

Key words:

Ethnomedicinal uses, Antidiabetics,
Rheumatism.

ABSTRACT

Medicinal plants have been an integral part of life in various regional communities for food and drug. The use of medicinal plants to treat human diseases has its root in pre historical times. The aim of the present study was to investigate the ethnomedicinal uses of various plant species in three villages of Poovanur, Velukudi and Lakshmangudi from Needamagalam Taluk, Thiruvarur District. The present study reports a total number of 79 species used to cure various oilments like antidiabetics, diarrhoea and dysentery, Gastrointestinal order, Rheumatism, wounds and skin diseases. The findings provide support for the use of the plant in traditional medication.

Citation: Rekha, D., Soundari, K., Lavanya, A. and Panneerselvam, A. 2016. "Some ethnomedicinal uses of plant species in Poovanur, Velukudi and Lakshmangudi villages of Needamangalam taluk, Thiruvarur district", *International Journal of Current Research*, 8, (05), 31016-31026.

INTRODUCTION

Plant –based medicines enjoy a respectable position today, especially in the developing countries, where modern health service is limited. Indigenous remedies which are more effective, safe and expensive and gaining popularity among both rural and urban areas. Information from ethnic groups of indigenous traditional medicine has played a vital role in the discovery of novel products from plant as chemotherapeutic agents (Katewa *et al.,* 2004). The World Health Organization (WHO) has emphasized the importance of the traditional indigenous medicines, since a large majority of rural people in the developing countries still use these medicines as the first defence in health care (Goleniowski *et al.,* 2006). Globally, about 85% of all medications for primary health care are derived from plants (Farnsworth, 1988). 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 (Sushil Kumar, 1994; Akerele, 1992). It was estimated that 2, 500 plant species have been utilized for medicinal purposes and more than 6 000 plants are widely used in folk and herbal medicine (Huxley, 1984). 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 70, 000 plant species from lichens to flowering trees, have been used at one time or other for medicinal purposes. 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 three different villages in Needamangalam Taluk, Thiruvarur District, Tamilnadu, India.

****Corresponding author: Rekha, D.***
PG and Research Department of Botany & Microbiology, A.V.V.M Sri Pushpam College (Autonomous), Poondi – 613 503, Thanjavur District

MATERIALS AND METHODS

Study area

The study area covers Poovanur, Velukudi and Lakshmangudi from Needamangalam Taluk, Thiruvarur District. Most of the communities doing agricultural practices in these districts. River Vennar, is the major water resource which flows through the heart of the town, keeps the soil most fertile.

Needamangalam has the route between Mannargudi and Thiruvarur of old East Thanjore District, 350 kilometres south east of Chennai with latitude of 10°44'33.78"N and longitude 79°25'15.54"E.

Data Collection

Ethnobotanical data were collected according to the methodology suggested by Jain (1964). The information was collected through questionnaires and discussions among the informants in their local language (Tamil). The questionnaires allowed responses on the plant prescribed, parts of the plants used, medicinal uses for each part, mode of preparation (i.e., Decoction, paste, powder, extract, boiled, infusion, oil, latex, resin and juice) form of usage (either fresh or dried) and additional plants used as ingredients. The collected and preserved plants were identified using The flora of Presidency of Madras (1935) and The flora of Tamil Nadu Carnatic Matthew (1983). Voucher specimens were deposited in the herbarium of A.V.V.M Sri Pushpam College, Thanjavur, Tamil Nadu, India. Most of the information was gathered from the elderly people, who have a very long acquaintance with the usage of plants. The medicinal plant survey conducted from December 2014 to June 2015. The plant specimen were freshly collected and were arranged properly within the folded sheets of pressing papers (12" / 18"), each of which was placed between two dry blotters of same size to make the herbariums. The whole piles of blotters and pressing sheets were then locked up in a field press for 24 hours. The preservations of plants were done without heat, it needed five changes of blotters and pressing sheets properly spread over a span of 12 days. Each specimen were mounted on a white card sheet (11.5" / 16.5") by using white gum paste (Uniyal and Chawhan, 1973, Ahluwalia, 1952; Khare, 2007; Chopra *et al.,* 1956). The informations collected regarding the medicinal uses of plants were analysed properly and documented.

The medicinal plants were identified (local name), photographed (Fig: 1) and sample specimens were collected for the preparation of herbarium.

The traditional knowledge of plant based remedies rests with the medicine men and they maintain it as closely guarded secret with in the family. Generally, they do not keep any written document and pass it to the next generation through practice and discussion. In view of such secretiveness of traditional medicine men and women it was decided to interview a number of elderly people who have a great deal of practical know how of this subject. Before actually launching into the field work, a report was established with the chief of a community and his guidance was sought to establish contact with the medicine men of the locality. Then, the field sites were visited accompanying the local medicine men. Generally, the herbalists do not want to give all information about a plant. Cross check of collected information from different people has been done to understand the utility of a plant in its totality. Personal observation was made for verification of the data, provided by the informants at different places, and only the verified and reliable information have been incorporated.

RESULTS AND DISCUSSION

In this study, we focused mainly on plant species reported by the local people in and around the study area for their medicinal uses. The information about the botanical name of the plant, family name and habits has been given (Table 1).

79 species of medicinal plant used to treat curing antidiabetics, diarrhoea and dysentery, Gastrointestinal order, Rheumatism, wounds and skin diseases types of diseases by the Poovanur, Velukudi and Lakshmangudi Villages.

The most dominant families of ethnobotanical importance are Fabaceae (7 species), Euphorbiaceae (6 species), Verbenaceae (4 species), Asteraceae (3 species), Caesalpiniaceae (3 species), Liliaceae (3 species), Rutaceae (3 species), Acanthaceae (2 species), Anacardiaceae (2 species), Asclepidaceae (2 species) Convolvulaceae (2 species), Malvaceae (2 species), Meliaceae (2 species), Menispermaceae (2 species), Moraceae (2 species), Myrtaceae (2 species), Papaveraceae (2 species), Pedaliaceae (2 species), Spaotaceae (2 species), Annonaceae (1 species), Apiaceae (1 species), Apocynaceae (1 species), Arecaceae (1 species), Bombaceae (1 species), Boraginaceae (1 species), Cactaceae (1 species), Capparaceae (1 species), Caricaceae (1 species), Combretaceae (1 species), Commelinaceae (1 species), Costaceae (1 species), Crassulaceae (1 species), Cucurbitaceae (1 species), Lamiaceae (1 species), Mimosaceae (1 species), Moringaceae (1 species), Nymphaceae (1 species), Phyllanthaceae (1 species), Poaceae (1 species), Punicaceae (1 species), Rhamnaceae (1 species), Rubiaceae(1 species), Scrophulariaceae (1 species), Solanaceae (1 species), Vitaceae (1 species) and Zingiberaceae (1 species). In the present study the numbers of family names were given in (Table 2 and Figure 2).

Most of the ethnobotanical studies confirmed that leaves are the major portion of the plant used in the treatment of diseases (Shanmugam *et al.,* 2012). Base on the life forms there are 25 herbs, 29 trees, 15 shrubs, 3 forb, 2 vines, 2 climbers, 1 climbing herb and 1 aquatic herb (Table 3 and Figures- 3) The herbal preparations made from the traditional medicinal plants were mostly used for the treatment of antidiabetics (30 species each), diarrhoea and dysentery (29 species each), Gastrointestinal disorder (1 species each), Rheumatism (12 species each) wounds (28 species each) and skin disease (4 species each). Some plants are appreciably effective in curing antidiabetics, diarrhoea and dysentery, Gastrointestinal order, Rheumatism, wound and skin diseases.

The present report is confined to plants with antidiabetic potentials and hence we have presented ethnomedicinal information on antidiabetics plants (Table – 4). The list includes various types of preparation used to cure diabetes. During the course of the study, a total of 30 antidiabetic plants species were documented. However, they did mention that most formulations were either decoctions or paste or extracted juices from crushed or macerated whole plant or plant (parts), which depending on extent was administered. Some medicinal plants and their parts were used to cure diarrhoea and dysentery as listed in the (Table – 5). The single medicinal plant *Centella asiatica* has been used to treat Gastrointestinal disorders as given in (Table – 6). In the present investigation 12 medicinal plants are used for the treatment of rheumatism (Table – 7). Different plant parts used by the people, the leaves are used most frequently to cure wounds and they applied mostly on the external surface of the body (Table - 8) The skin diseases can be cured by using some medicinal plants like *Clerodendron, Crotalaria* etc., has been listed (Table – 9).

Table 1. List of plants with scientific name, family name and habits

	Botanical Name	Family	Habit
1.	*Acalypha indica* L.	Euphorbiaceae	Herb
2.	*Aegle marmelos* L.	Rutaceae	Tree
3.	*Ageratum conyzoides* L.	Asteraceae	Forb
4.	*Aloe vera* L.	Liliaceae	Herb
5.	*Anacardium occidentale* L.	Anacardiaceae	Tree
6.	*Andrographis paniculata* (Burm.f.) Wall. Ex Nees	Acanthaceae	Herb
7.	*Annona squamosa* L.	Annonaceae	Tree
8.	*Arbus precatorius* L.	Fabaceae	Vine
9.	*Argemone mexicana* L.	Papaveraceae	Forb
10.	*Asparagus racemosus* L.	Liliaceae	Herb
11.	*Azadirachta indica* A.Juss	Meliaceae	Tree
12.	*Barleria cristata* L.	Acanthaceae	Shrub
13.	*Bauhinia purpurea* L.	Caesalpiniaceae	Tree
14.	*Bombax ceiba* L.	Bombaceae	Tree
15.	*Borassus flabellifer* L.	Arecaceae	Tree
16.	*Cajanus cajan* (L.) Millsp	Fabaceae	Shrub
17.	*Calotrophis gigantea* (C.) R.Br.	Asclepidaceae	Shrub
18.	*Carica papaya* L.	Caricaceae	Tree
19.	*Cassia fistula* L.	Caesalpiniaceae	Tree
20.	*Cathranthus roseus* (L.) G.Don	Apocynaceae	Shrub
21.	*Centella asiatica* (L.) Urban	Apiaceae	Herb
22.	*Cissampelos pareira* L.	Menispermaceae	Climber
23.	*Cissus quandrangularis* Mant.	Vitaceae	Herb
24.	*Cleome viscosa* L.	Capparaceae	Herb
25.	*Clerodendron phlomoides* L.f	Verbenaceae	Tree
26.	*Commelina benghalensis* L.	Commelinaceae	Herb
27.	*Costus speciosus* (Koenig.) J.E.Smith	Costaceae	Shrub
28.	*Crotalaria pallida* Aiton Hort.	Fabaceae	Herb
29.	*Curcuma longa* L.	Zingiberaceae	Herb
30.	*Cynodon dactylon* (L.) Pers	Poaceae	Herb
31.	*Delonix regia* (Boj. Ex Hook.) Raf.	Fabaceae	Tree
32.	*Eclipta prostrata* L.	Asteraceae	Herb
33.	*Erythrina variegata* L.	Fabaceae	Tree
34.	*Euphorbia hirta* L.	Euphorbiaceae	Herb
35.	**Evolvulus** *alsinoides* L.	Convolvulaceae	Herb
36.	*Ficus bengalensis* L.	Moraceae	Tree
37.	*F. racemosa* L.	Moraceae	Tree
38.	*Gloriosa superba* L.	Liliaceae	Climbing Herb
39.	*Gymnema sylvestre* (Retz) R.Br.ex Schultes	Asclepiadaceae	Climber
40.	*Ipomea carnea* Jacquin	Convolvulaceae	Vine
41.	*Ixora coccinia* L.	Rubiaceae	Shrub
42.	*Jatropha curcas* L.	Euphorbiaceae	Shrub
43.	*J. gossypifolia* L.	Euphorbiaceae	Shrub
44.	*Kalanchoe pinnata* (Lam) Pers	Crassulaceae	Herb
45.	*Lantana camera* Linn	Verbenaceae	Shrub
46.	*Leucas aspera* L.	Lamiaceae	Herb
47.	*Limonia acidissima* Linn	Rutaceae	Tree
48.	*Madhuca longifolia* (J.) J.Macbr.,	Sapotaceae	Tree
49.	*Mangifera indica* Linn	Anacardiaceae	Tree
50.	*Melia azedarach* L.	Meliaceae	Tree
51.	*Mimosa pudica* L.	Mimosaceae	Herb
52.	*Mimusops elengi* L.	Sapotaceae	Tree
53.	*Momordica charantia* L.	Cucurbitaceae	Herb
54.	*Moringa oleifera* L.	Moringaceae	Tree
55.	*Murraya koiningii* (L.) Sperng	Rutaceae	Tree
56.	*Nelumbium speciosum* Willd	Nymphaceae	Aquatic herb
57.	*Opuntia dillenii* (Ker-Gawl.) Haw.,	Cactaceae	Shrub
58.	*Pedalium murex* L.	Pedaliaceae	Herb
59.	*Phyllanthus emblica* L.	Phyllanthaceae	Tree
60.	*P. niruri* L.	Euphorbiaceae	Herb
61.	*Psidium gujava* L.	Myrtaceae	Tree
62.	*Punica granatum* L.	Punicaceae	Tree
63.	*Ricinus communis* L.	Euphorbiaceae	Shrub
64.	*Scoparia dulcis* L.	Scrophulariaceae	Herb
65.	*Seasamum indicum* L.	Pedaliaceae	Herb
66.	*Sida cordifolia* L.	Malvaceae	Shrub
67.	*Solanum torvum* Sw	Solanaceae	Shrub
68.	*Syzygium cuminii* (L.) Skeels	Myrtaceae	Tree
69.	*Tamarindus indica* L.	Caesalpiniaceae	Tree
70.	*Tectona grandis* Linn	Verbenaceae	Tree
71.	*Tephrosia purpurea* (L.) Pers	Fabaceae	Herb
72.	*Terminalia bellirica* (Gaertn.) Roxb.,	Combretaceae	Tree
73.	*Tinospora cordifolia* (Willd.) Miers	Menispermaceae	Climbing Shrub
74.	*Trichodesma zeylanicum* (Brum.f.) R.Br.,	Boraginaceae	Herb
75.	*Tridax procumbens* L.	Asteraceae	Herb
76.	*Urena lobata* L.	Malavaceae	Shrub
77.	*Vigna mungo* L.	Fabaceae	Forb
78.	*Vitex negundo* L.	Verbenaceae	Shrub
79.	*Ziziphus jujuba* Mill	Rhamnaceae	Tree

Table 2. Family name

	Family Name	Numbers
1.	Acanthaceae	2
2.	Anacardiaceae	2
3.	Annonaceae	1
4.	Apiaceae	1
5.	Apocynaceae	1
6.	Arecaceae	1
7.	Asclepiadaceae	2
8.	Asteraceae	3
9.	Bombaceae	1
10.	Boraginaceae	1
11.	Cactaceae	1
12.	Caesalpiniaceae	3
13.	Capparaceae	1
14.	Caricaceae	1
15.	Combretaceae	1
16.	Commelinaceae	1
17.	Convolvulaceae	2
18.	Costaceae	1
19.	Crassulaceae	1
20.	Cucurbitaceae	1
21.	Euphorbiaceae	6
22.	Fabaceae	7
23.	Lamiaceae	1
24.	Liliaceae	3
25.	Malvaceae	2
26.	Meliaceae	2
27.	Menispermaceae	2
28.	Mimosaceae	1
29.	Moraceae	2
30.	Moringaceae	1
31.	Myrtaceae	2
32.	Nymphaceae	1
33.	Papaveraceae	1
34.	Pedaliaceae	2
35.	Phyllanthaceae	1
36.	Poaceae	1
37.	Punicaceae	1
38.	Rhamnaceae	1
39.	Rubiaceae	1
40.	Rutaceae	3
41.	Sapotaceae	2
42.	Scrophulariaceae	1
43.	Solanaceae	1
44.	Verbenaceae	4
45.	Vitaceae	1
46.	Zingiberaceae	1

Table 3. Percentage (%) of Habit wise distribution

S.No	Habit wise distribution	No (%)
1.	Aquatic herb	1
2.	Climber	2
3.	Climbing Herb	1
4.	Climbing Shrub	1
5.	Forb	3
6.	Herb	25
7.	Shrub	15
8.	Tree	29
9.	Vine	2

Fig. 1. Prepared Herbarium sheets

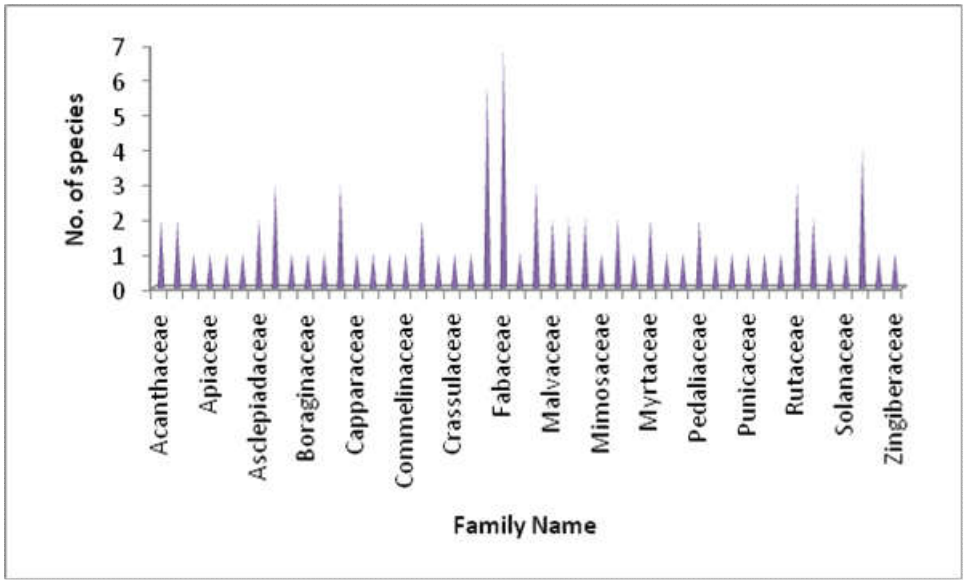

Fig. 2. Family Names

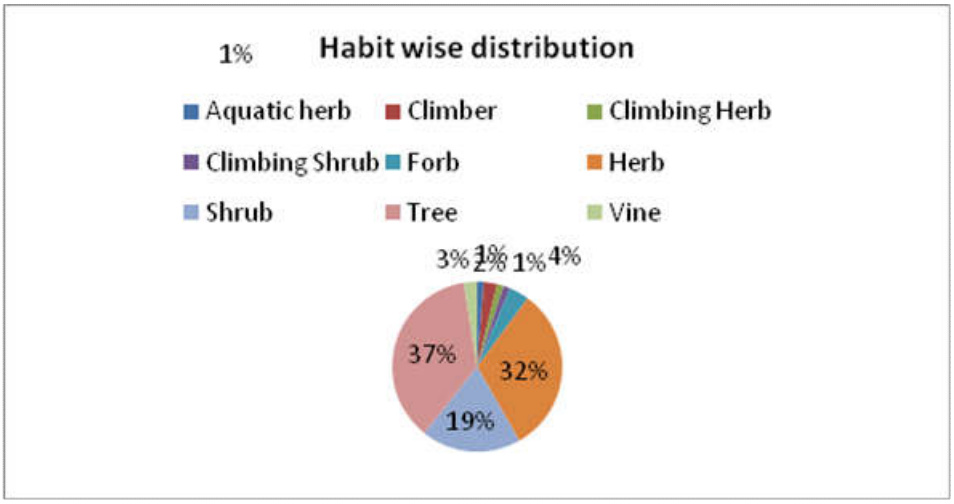

Fig. 3. Percentage (%) of Habit wise distribution

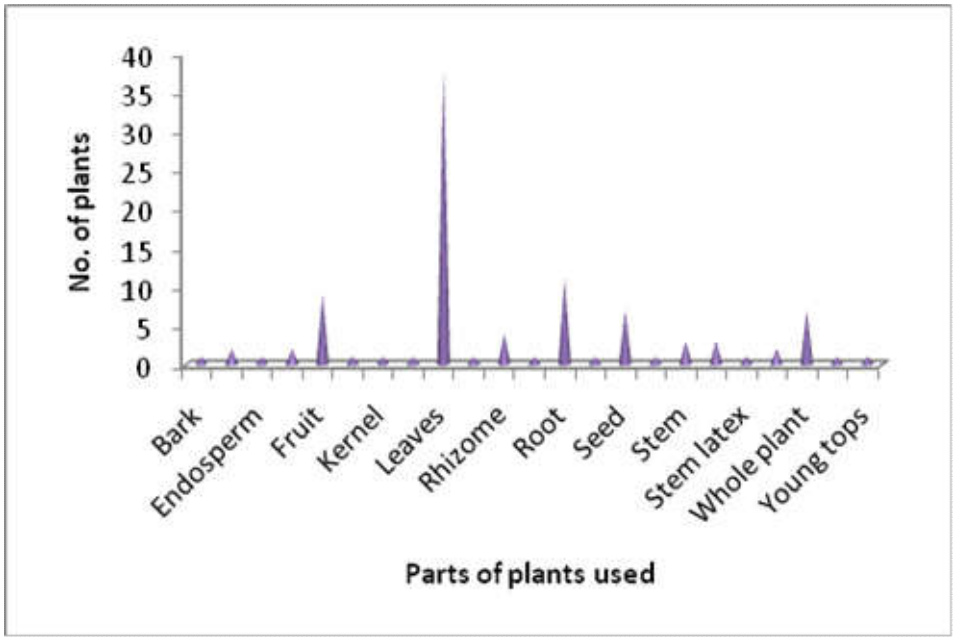

Fig. 4. Parts of Medicinal plants used for the treatment

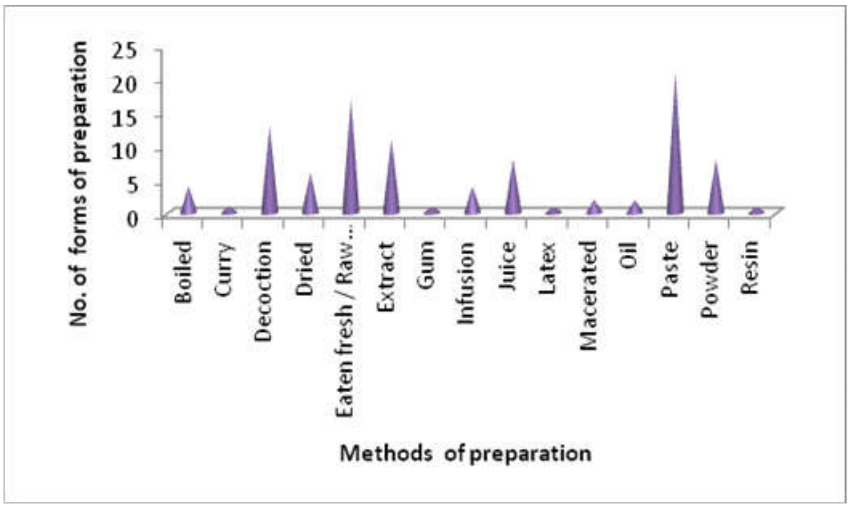

Fig. 5. Mode of preparation of medicine

Table 4. List of plants used as antidiabetics

S.No	Botanical Name	Family	Vernacular	Parts used	Usage and Preparation
1.	*Ageratum conyzoides* L.	Asteraceae	Sethupunthalai Mookuthi poo	Whole plant	A cup of maceration whole plant is taken to treat diabetics
2.	*Argemone mexicana* L.	Papaveraceae	Birammhathandu	Stem	Curry made from stem is used in diabetics
3.	*Andrographis paniculata* (Burm.f.) Wall. Ex Nees	Acanthaceae	Periyanangai	Leaves	Leaf is shade dried, powdered and mixed with boiled rice and cow's milk and taken orally
4.	*Annona squamosa* L.	Annonaceae	Seetha	Bark, leaf	Raw bark / or and leaf were grinded and the extracts were obtained by squishing
5.	*Arbus precatorius* L.	Fabaceae	Kundumani	Leaves	Leaf of this plant is mixed with the leaves of *Andrographis paniculata, Gymnema sylvestre* and seeds of *Syzygium cumini.* The mixture is shade dried and ground into powder and taken orally along with cow's milk.
6.	*Asparagus racemosus* L.	Liliaceae	Shatavari	Root	Juice made from the tuberous root is used in diabetics
7.	*Azadirachta indica* A.Juss	Meliaceae	Vembu	Leaves	Raw leaf extracts mixed with little water is taken daily in empty stomach
8.	*Bombax ceiba* L.	Bombaceae	Elavamaram	Immature roots	Juice made from roots is used in diabetics
9.	*Cajanus cajan* (L.) Millsp	Fabaceae	Thuvarai	Immature roots	Juice made from immature roots is used in diabetics
10.	*Cathranthus roseus* (L.) G.Don	Apocynaceae	Nithiyakalayani	Leaves	Fresh leaf extracts or fresh leaf may be chewed in empty stomach
11.	*Centella asiatica* (L.) Urban	Apiaceae	Vallaarai	Leaves	Fresh leaf extracts 2-3 tea spoon in empty stomach nearly 21 days in the early diabetic conditions
12.	*Costus speciosus* (Koenig.) J.E. Smith	Costaceae	Kostak-kilangu	Rhizome	Fresh rhizome is ground into a paste and taken orally
13.	*Curcuma longa* L.	Zingiberaceae	Turmeric	Rhizome	Raw turmeric mixed water and honey were grinded, taken for after meal
14.	*Erythrina variegata* L.	Fabaceae	Kalyanamurungai	Roots	Fresh roots were grounded for obtaining juice
15.	*Ficus racemosa* L.	Moraceae	Atthi	Ripe fruits	Ripe fruits are eaten as remedy for diabetics. It is used as a supportive medicine for the diabetes treatments
16.	*Gymnema sylvestre* (Retz) R.Br.ex Schultes	Asclepiadaceae	Sirukurinjan	Leaves	Dried leaves are powdered and the fine powder thus obtained is taken orally along with milk
17.	*Kalanchoe pinnata* (Lam.) Pers	Crassulaceae	Patharkuchi/ Minnarkodi	Leaves	Raw leaves and water grinded, taken for early in the morning
18.	*Leucas aspera* L.	Lamiaceae	Thumbai	Whole plant	The plant is believed to be a liver corrective herb. It is used as a pot herb during diabetic treatment
19.	*Momordica charantia* L.	Cucurbitaceae	Pagal	Dried fruits	Dried and powdered fruits taken orally of fruits macerated with olive oil and one spoon taken orally a day
20.	*Moringa oleifera* L.	Moringaceae	Murungai	Leaves	Soak leaves in boiled water for few minutes and drink the water regularly / repeatedly for some weeks to treat diabetics
21.	*Murraya koiningii* (L.) Sperng	Rutaceae	Kariveppilai	Leaves	Leaf extract 2-3 tea spoon early in the morning
22.	*Phyllanthus emblica* L.	Phyllanthaceae	Nelli	Fruits	Fruit juice were mixed with honey and taken every day to treat diabetics
23.	*Psidium gujava* L.	Myrtaceae	Koyya	Leaves	Leaves boiled for alone or mixed with other plants for diarrhoea
24.	*Ricinus communis* L.	Euphorbiaceae	Amanakku	Seeds	4-5 dried fruits are eaten a day
25.	*Scoparia dulcis* L.	Scrophulariaceae	Sarkaraivembu	Leaves	Fresh leaves 5 – 6 in number are eaten or chewed for three times a day before meals
26.	*Seasamum indicum* L.	Pedaliaceae	Ellu	Seeds	25-30gram seeds eaten
27.	*Syzygium cuminii* (L.) Skeels	Myrtaceae	Naavalmaram	Leaves	Juice extracted from the leaf is mixed with honey or cow's milk and fresh fruits are taken orally.
28.	*Tinospora cordifolia* (Willd.) Milers	Menispermaceae	Cheenthil	Leaf	Leaf stalk powder mixed with neem paste is used in diabetics
29.	*Vigna mungo* L.	Fabaceae	Ulunthu	Seeds	Raw seeds grounded and soaked in 1 cup of milk overnight and taken for 20 days
30.	*Ziziphus jujuba* Mill	Rhamnaceae	Elanthai	Dried fruits	5-6 dried fruits eaten in a day

Table 5. List of plants used as diarrhoea and dysentery

S.No	Botanical Name	Family	Vernacular	Parts used	Usage and Preparation
1.	*Asparagus racemosa* L.	Liliaceae	Thanneervittankizhangu	Tuber	The 100 grms of tuber is dried and powdered to cure diarrhoea and dysentery
2.	*Barleria cristata* L.	Acanthaceae	December poo	Root	Root is ground into a paste and taken orally; half a dose may be given to children to treat diarrhoea
3.	*Bauhinia purpurea* L.	Caesalpiniaceae	Mandhaarai	Root bark	Decoction of root bark is taken orally to cure diarrhoea
4.	*Borassus flabellifer* L.	Arecaceae	Panai	Endosperm	4-5 tender endosperms are eat as raw for 2 days to cure diarrhoea
5.	*Carica papaya* L.	Caricaceae	Pappaali	Fruits	Fruit pieces are soaked in honey for few minutes and eat twice daily for 4-5 days to cure blood dysentery
6.	*Cissus quandrangularis* Mant.	Vitaceae	Pirandai	Young tops	Young tops are cooked and eaten 3 times per day with normal diet for 3 days to cure dysentery
7.	*Cynodon dactylon* (L.) Pers	Poaceae	Arugambull	Root	Root extract is given to drink with 200ml of cow milk twice a day for 4 days to cure blood dysentery
8.	*Euphorbia hirta* L.	Euphorbiaceae	Ammaanpaccharisi	Leaves	Leaf paste is mixed with 150ml of goat milk and consumed thrice a day for 2 days to cure diarrhoea and dysentery
9.	*Evolvulus alsinoides* (Linn.)	Convolvulaceae	Vishnukranthi	Whole plant	Decoction of the plant is used against dysentery
10.	*Ficus benghalensis* L.	Moraceae	Aalamaram	Stem bark	Stem bark decoction is taken orally with 40 – 50 ml of honey twice a day in empty stomach for 3 days to cure diarrhoea and dysentery
11.	*Kalanchoe pinnata* (Lam) Pers	Crassulaceae	Minnarkodi	Leaves	Leaf extract is useful in diarrhoea and dysentery
12.	*Lantana camera* Linn	Verbenaceae	Unnichedi	Leaves	Leaf juice is used to treat dysentery
13.	*Limonia acidissima* Linn	Rutaceae	Vilankai	Gum	Gum obtained from the trunk and branches of the tree is useful in diarrhoea and dysentery
14.	*Mangifera indica* Linn	Anacardiaceae	Mamaram	Kernel	Decoction of the kernel is generally prescribed against diarrhoea
15.	*Mimusops elengi* L.	Sapotaceae	Magizham	Fruit	Fruit extract is give to drink with 100 ml of cow milk once daily in morning for 3 days to cure diarrhoea and dysentery
16.	*Moringa oleifera* Lam	Moringaceae	Murungai	Leaves	Leaves are roasted with small amount of salt. The roasted leaves are powdered and the powder is mixed with 100ml hot water and given to drink twice daily for 3 days to cure diarrhoea
17.	*Murraya koenigii* (Linn.) Spreng	Rutaceae	Kariveppillai	Leaves	Decoction of leaves and petioles given against diarrhoea
18.	*Nelumbium speciosum* Willd	Nymphaceae	Thaamarai	Rhizome	Decoction is taken orally once daily in morning for 2 – 3 days to cure diarrhoea and dysentery
19.	*Pedalium murex* L.	Pedaliaceae	Yaanai nerungil	Fruit	Fruit decoction is given to drink with 50 – 100ml of hot water twice a day for 2 – 3 days to cure diarrhoea
20.	*Phyllanthus niruri* L.	Euphorbiaceae	Keelaanelli	Leaves	Leaf extract is taken orally in empty stomach to cure diarrhoea and dysentery
21.	*Psidium gujava* L.	Myrtaceae	Koyya	Leaves	Leaves boiled for alone or mixed with other plants for diarrhoea.
22.	*Punica granatum* L.	Punicaceae	Maadhulai	Young flower	Extract of young flower is taken orally to cure dysentery
23.	*Sida cordifolia* L.	Malvaceae	Nilathuthi	Leaves	Leaf extract is given to drink once a day in morning with 100ml of cow milk to cure dysentery
24.	*Solanum torvum* Sw	Solanaceae	Sundai	Fruits	Fruits are roasted and powdered. The powder is taken with normal diet to cure diarrhoea
25.	*Tamarindus indica* L.	Caesalpiniaceae	Puli	Seed	Seed coat powder is mixed with milk and given to drink to cure diarrhoea
26.	*Tectona grandis* Linn	Verbenaceae	Thekku	Wood bark	Decoction of bark is used for dysentery infusion of wood is used in the treatment of dysentery
27.	*Tephrosia purpurea* (L.) Pers	Fabaceae	Kozhinchi	Leaves	Decoction of leaves used for diarrhoea
28.	*Terminalia bellirica* Roxb.	Combretaceae	Tanri	Fruit	Mature and dry fruit is used for diarrhoea and dysentery
29.	*Tinospora cordifolia* (Willd.) Miers	Menispermaceae	Cheenthalkodi	Whole plant	The infusion of plant with long pepper and honey is given for chronic dysentery

Table 6. List of plants used as Gastrointenstinal disorders

S.No	Botanical Name	Family	Vernacular	Parts used	Usage and Preparation
1.	*Centella asiatica* Linn	Apiaceae	Vallarai	Roots and leaves	Infusion, decoction and concoction of the leaves and roots

Table 7. List of plants used to cure Rheumatism

S.No	Botanical Name	Family	Vernacular	Parts used	Usage and Preparation
1.	*Argemone Mexicana* L.	Papaveraceae	Kudiyotti	Seed	Seed oil is applied externally on affected plants
2.	*Cassia fistula* L.	Caesalpiniaceae	Sarakkondrai	Leaves	Paste of young leaves is applied externally
3.	*Cissampelos pareira* L.	Menispermaceae	Thaalikodi	Leaves	Paste of leaves is applied externally in rheumatic pain
4.	*Costus speciosus* (Koenig ex Retz.) J.E.Smith	Costaceae	Kostam	Roots	Roots are grounded, mixed with mustard oil and made into paste, this paste is applied externally to get relief from rheumatism
5.	*Cynodon dactylon* (L.)	Poaceae	Arugampul	Whole plant	Plant paste is applied externally in rheumatism
6.	*Gloriosa superba* L.	Liliaceae	Venkanthal	Roots	Roots are crushed, fried in mustard oil and made into paste this paste is used externally for massage in rheumatism
7.	*Ipomea carnea* Jacquin	Convolvulaceae	Neyveli Kattamanakku	Leaves	Leaf paste is applied externally in rheumatic area of the body
8.	*Jatropha curcas* L.	Euphorbiaceae	Seemai Kattamanakku	Seeds	Oil of seeds is used externally in rheumatism
9.	*Melia azedarach* L.	Meliaceae	Malaivembu	Seeds	Seeds decoction used internally is treatment of rheumatism
10.	*Momordica charantia* L.	Cucurbitaceae	Pagal	Fruits	The infusion of fruits is used internally in treatment of rheumatism
11.	*Ricinus communis* L.	Euphorbiaceae	Aamanakku	Roots	Infusion of roots is taken with sugar in treatment of rheumatism. The oil of seed is used for massaging in rheumatism
12.	*Vitex negundo* L.	Verbenaceae	Nochi	Roots	The decoction of roots is prescribed for rheumatism

Table 8. List of plants possess wound healing property

S.No	Botanical Name	Family	Vernacular	Parts used	Usage and Preparation
1.	*Acalypha indica* L.	Euhorbiaceae	Kuppaimeni	Leaves	Leaf of this plant is ground into a paste and taken orally along with the leaf paste of *Mimosa pudica, Azadirachta indica* and flowers of *Albizia lebbeck* to treat skin diseases (itching) and wounds
2.	*Aegle marmelos* L.	Rutaceae	Vilvam	Leaves	The paste along with black pepper, slightly heated and applied on the wounds
3.	*Ageratum conyzoides* L.	Asteraceae	Sethupunthalai Mookuthi poo	Leaf young shoot	Paste and juice is applied in injured portion of cut and wounds
4.	*Aloe vera* L.	Liliaceae	Katralai	Leaf pulp	Flush leaf pulp is applied on bleeding wound
5.	*Anacardium occidentale* L.	Anacardiaceae	Munthiri	Fruit	Fruit of this plant, fruit of *Ananus comosus* and rhizome of *Withania somnifera* and ground with water and the juice thus obtained is taken orally to heal wounds
6.	*Argemone mexicana* L.	Papaveraceae	Kudiyotti	Roots	Roots paste is applied on the wounds
7.	*Azadirachta indica* A.Juss	Meliaceae	Vembu	Leaves	Boiled leaves water are used for washing the wounds and leaves paste mixed with mustard oil is also used for wound healing
8.	*Calotrophis gigantea* (C.) R.Br.	Asclepidaceae	Erukku	Stem latex	Few drops of the stem latex are used to treat wounds created by throns in heels and to remove the throns from heel (external application)
9.	*Centella asiatica* L.	Apiaceae	Vallarai	Leaves	Leaf paste is applied to wounds
10.	*Cissampelos pareira* L.	Menispermaceae	Thaalikodi	Root	Root extracted is applied over the wound
11.	*Cleome viscosa* L.	Capparaceae	Naikadugu/ Nalavelai	Leaves	Leaf paste is applied over the wound
12.	*Commelina benghalensis* L.	Commelinaceae		Stem	Juice extracted from the stem is mixed with the stem juice of *Canna indica* and fruits of *Areca catechu.* The mixture is applied topically on affected places to heal wounds
13.	*Costus speciosus* (Koenig.) J.E.Smith	Costaceae	Kostak-kilangu	Leaves	Leaf of this plant is mixed with the leaves of *Cynodon dactylon, Glycyrrhiza glabra, Canna indica* and stem bark of *Punica granatum*. The juice extracted from this mixture is applied topically on affected places to heal wounds
14.	*Curcuma longa* L.	Zingiberaceae	Manjal	Rhizome	Paste is mixed with mustard oil and applied on the wounds
15.	*Delonix regia* (Boj. Ex Hook.) Raf.	Fabaceae		Leaves	Leaves are crushed and applied on the wounds
16.	*Eclipta prostrata* L.	Asteraceae	Karisalanganni	Roots	Root paste mixed coconut oil applied in wounds
17.	*Euphorbia hirta* L.	Euphorbiaceae	Paalchedi	Whole plant	Plant paste is slightly heated and applied on the wounds
18.	*Ficus bengalensis* L.	Moraceae	Aalamaram	leaves	Leaf powder is mixed with coconut oil and applied topically on different places to treat wounds
19.	*Ficus racemosa* L.	Moraceae	Atthimaram	Stem bark	Stem bark of *Syzygium cumini* and *Punica granatum* are boiled in water and the decoction thus obtained is used to wash wounds
20.	*Ixora coccinia* L.	Rubiaceae	Idlipoo	Flowers	Flowers of this plant are mixed with the leaves of *Coldenia procumbens, Centella asiatica* and stem bark of *Madhuca longifolia* boiled with water. The decoction thus obtained is applied topically along with coconut oil to heal wounds
21.	*Jatropha gossypifolia* L.	Euphorbiaceae	Adhalai	Resin	Resin obtained from this plant is used for mouth wash and heal wounds in lips and tongue
22.	*Madhuca longifolia* (J.) J.Macbr.,	Sapotaceae	Naattuiluppaii	Stem bark	Stem bark of this plant, rhizomes of *Asparagus racemosus, Aristolochia indica*, leaves of *Ocimum basilicum and Elephantopus scaber* are mixed and boiled with water and the decoction, thus obtained is taken orally to heal wounds.

23.	*Mimosa pudica* L.	Mimosaceae	Thottalsurungi	Leaves	Leaves are crushed along with *Eupatorium odoratum* and applied on the wounds
24.	*Opuntia dillenii* (Ker-Gawl.) Haw.,	Cactaceae	Sappathikalli	Stem	Inner fresh part of stem is mixed with the leaf of *Aloe vera* and sugar. The mixture is ground into a paste and taken orally and applied topically on affected places to heal wounds
25.	*Scoparia dulcis* L.,	Scrophulariaceae		Leaves	Leaf is ground into a paste and applied topically on affected places to heal wounds
26.	*Terminalia bellirica* (Gaertn.) Roxb.,	Combretaceae	Thandrimaram	Fruit	Fruit of this plant, stem barks of *Pongamia pinnata, Toddalia asiatica* and *Plerocarpus marsupium* are boiled with water and the decoction thus obtained is used to wash the affected places to heals wounds soon
27.	*Trichodesma zeylanicum* (Brum.f.) R.Br.,	Boraginaceae	Mulluthumbai chedi	Leaves	Leaf of this plant, rhizome of *Glycyrrhiza glabra*, stem of *Canna indica* and stem bark of *Punica granatum* are mixed and ground into a paste and applied topically on affected places to heal wounds
28.	*Tridax procumbens* L.	Asteraceae	Vettukayapoondu	Leaves	Paste made from the fresh leaves is applied over the wounds to heal soon

Table 9. List of plants used to cure skin diseases

S.No	Botanical Name	Family	Vernacular	Parts used	Usage and Preparation
1.	*Clerodendron phlomoides* L.f.	Verbenaceae	Taluthalai	Leaves	Leaves are ground into a paste and taken orally along with honey twice a day for three days to get relief from body tiredness and to cure skin diseases
2.	*Crotalaria pallida* Aiton Hort.	Fabaceae	Kilukiluppai	Whole plant	Leaf and root bark with the leaves of *Wrightia tinctoria* and *Tragia involucrata* is made into a paste with water and applied externally to cure skin diseases
3.	*Gloriosa superba* L.	Liliaceae	Kalappai kilangu, Kanavalipoo	Tuber	Powder of tuber along with seeds of *Arbus precatorius* and flower of *Cassia senna* is mixed with groundnut flower and applied externally
4.	*Urena lobata* L.	Malavaceae	Kodi thutthi	Leaves	Powdered leaves of *Jasminum flexile* is mixed with water and taken internally to cure skin diseases (itching)

Table 10. Parts of Medicinal plants used for the treatment

S.No	Part of plants	Number
1.	Bark	1
2.	Dried fruits	2
3.	Endosperm	1
4.	Flowers	2
5.	Fruit	9
6.	Gum	1
7.	Kernel	1
8.	Leaf pulp	1
9.	Leaves	38
10.	Resin	1
11.	Rhizome	4
12.	Ripe fruits	1
13.	Root	11
14.	Root bark	1
15.	Seed	7
16.	Shoot	1
17.	Stem	3
18.	Stem bark	3
19.	Stem latex	1
20.	Tuber	2
21.	Whole plant	7
22.	Wood bark	1
23.	Young tops	1

Table 11. Mode of preparation of medicine

S.No	Methods of preparation	Number
1.	Boiled	4
2.	Curry	1
3.	Decoction	13
4.	Dried	6
5.	Eaten fresh / Raw material	17
6.	Extract	11
7.	Gum	1
8.	Infusion	4
9.	Juice	8
10.	Latex	1
11.	Macerated	2
12.	Oil	2
13.	Paste	21
14.	Powder	8
15.	Resin	1

The data on folk medicinal uses have been compared with recently available literature. (Ali *et al.,* 2010, Aminuddin & Girach, 1991; Annonymous, 2001, 2006; Chopra *et al.,* 1992; Girach *et al.*, 1998; Jain 1991, Jain & Rao 1967; Kirtikar & Basu 1935; Tribedi *et al*., 1982) and found that most of the folk medicinal plants are dually reported in the literature, however, mode of administration, ingredients and part used are different. Therefore, the present study represents contemporary folk uses of medicinal plants of the Poovanur, Velukudi and Lakshmangudi Villages, Needamangalam Taluk, Thiruvarur District were reported. It would be worthwhile to subject all these folk drugs to validate scientifically in the context of claims reported herein.

Most of the species used in the preparation of herbal medicine were collected in fresh form, very rarely; dried and stored materials were used. Among the various plant parts used for the herbal formulations, leaves, stem, bark followed by root were preferred over other plant parts such as flowers, seeds and fruits (Table - 10 & Figures -4). The most popular medicinal preparations are decoction, infusion, paste or juice, powder, etc. The medicinal uses of some species may vary from village to village (Table -11 & Figure -5). Generally people in the rural and remote areas do not get proper medical treatment in time and they mostly depend on traditional healers, who practice herbal medicines for the treatment of various ailments. Thus both the people in the area and traditional practitioners are benefited by enhancing economic status of their families.

The curing of skin problems through herbs is common in Ayurvedha and Unani system. The survey of different systems reveals that many plants are used for curing skin problems.

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 (WHO, 2002). 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 (Chaudhary and Singh, 2011). Seven hundred more plants are investigated pharmacologically and chemically for their active principles, which are used in modern medical system.

Conclusion

The study showed that a good number of collected plants were used for the treatment of multiple diseases. In recent years the number of plant species has been decreased due to rapid fragmentation of natural habitats. Many of the plants that are used by the local people in Poovanur, Velukudi and Lakshmangudi Villages, Needamagalam Taluk, Thiruvarur District were reported. The survey reveals that many of the herbs used by the rural people for treatment of various diseases are very common, easily available at low cost and hence affordable. Their mode of preparation and mode of administration are also simple and convenient for the treatments and without any side effects. Interestingly, the local people are aware of the sustainable use of these medicinal plants.

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 Poovanur, Velukudi and Lakshmangudi Villages Needamanglam Taluk Thiruvarur District, Tamilnadu, India.

REFERENCES

Ahluwalia, K.S. 1952. Medicinal plants of Kangra valley, Indian Forester. 78

Akerele O. 1992. WHO guidance for assessment of herbal medicines. Fitoterapia; 63: 99-118.

Aminuddin, Girach RD. Ethnobotanical studies of Bondo tribe of District Koraput (Orissa), India. Ethnobotany. 1991; 3: 15 – 20

Anonymous. Medicinal Plants in Folklores of Bihar and Orissa. C.C.R.U.M., New Delhi (2001).

Anonymous. Medicinal Plants in Folklores of Orissa. C.C.R.U.M., New Delhi (2006).

Chaudhary A, Singh N. Contribution of world health organization in the global acceptance of Ayurveda. J Ayurveda Integr Med 2011; 2: 179-186.

Chopra, R.N.Nayar, S.L. Chopra, I.C. 1956. Supplement to glossary of Indian medicinal plants, New Delhi. Council of Scientific & Industrial Research

Farnsworth, N.R. 1988. Screening plants for new medicines. In: Biodiversity, [Wilson, E.O. and Peter, F.M., (Eds.); National Academy Press, Washingto, D.C., pp: 83 – 97.

Gamble, J.S. 1935. The flora of the Presidency of Madras, Vol: I – III. London; Adlard & Son, Ltd.

Girach RD., Medicinal plants used by Kondh Tribe of District Phulbani (Orissa) in Eastern India. Ethnobotany. 1992; 4: 53 – 66.

Goleniowski, M.E., Bongiovanni, G.A., Bongiovanni, L., Palacio, C.O. and Cantero, J.J. 2006. Medicinal plants from the 'Sierra de comechingones". Argentina. Journal of Ethnopharmacology, 107: 324 – 341.

Huxley AJ. 1984. Green inheritance: The world wild life fund book of India. Harvel, London: Collins;

Jain SK and Rao RR. 1967. A handbook of field and herbarium methods. Today and Tomorrow Printers and Publishers, New Delhi.

Jain SK. 1991. Dictionary of Indian Ethnobotany and Folk Medicine. Deep Publication, New Delhi.

Jain, S.K. 1964. The role of botanist in folklore research. Folklore, 5: 145 – 150.

Katewa, S.S., Chaudhary, B.L. and Jain, Z. 2004. Folk herbal medicines from tribal area of Rajasthan, India. *Journal of Ethnopharmacology*, 92: 41 – 46.

Khare, C.P. 2007. Indian Medicinal plants; An illustrated Dictionary, New York, Springer Science Business media. LLC.

Kirtikar KR and Basu BD. 1935. Indian Medicinal Plants. Vol. I – IV. Periodical Experts, Delhi, India.

Matthew, K.M. 1983. The flora of the Tamil Nadu Carnatic, Vol: I – III. Tiruchirappalli, India. The Rapinat Herbarium, St. Joseph's College.

Shanmugam, K.Rajendran and K.Suresh, 2012. Traditional uses of medicinal plants among the rural people in Sivagangai District of Tamil Nadu, Southern India. *Asian Pacific Journal of Tropical Biomedicine*, pp: S429 – S434.

Sushil Kumar, 1994. Medicinal plants in skin care. Lucknow, India: *Central Institute of Medicinal and Aromatic Plants*, p. 425-504.

Tribedi G N., Kayal R N., Chaudhury Rai H. N. Some Medicinal Plants of Mayurbhanj (Orissa). Bull. Bot. Surv. India., 1982; 24: 119 – 120.

Uniyal, M.R. and Chauhan, N.S. 1973. Traditionally important medicinal plants of Kangra Valley in Dharamsala Forest Circle, Himachal Pradesh. *J. Res. Indian Med*., 8: 76 – 85.

WHO. WHO traditional medicine strategy. Geneva: World Health Organization; 2002. [Online] Available at: http://www.who.int/medicines/publications/traditional policy/en/ [Access on 23 April, 2013].

****