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Research Article



Studies on curative climbers in select wetlands of Agastheeswaram Taluk, Kanyakumari District, Tamilnadu, Southern India

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Abstract

Survey of ethnomedicinal climbers were carried out for the period of two years (October 2014 and October 2016) in select ponds of Agastheeswaram Taluk of Kanyakumari District. The total of 43 climbing medicinal plant species belong to 36 genera with 18 families collected from the present study area. Among them Asclepiadaceae is a dominant family, which has contributed 9 plant species followed by Convolvulaceae (7 species) Cucurbitaceae and Fabaceae 5 species each, Liliaceae (3 species), Menispermaceae (2 species) remaining twelve families have monospecific. Out of 43 medicinal climbers, 37 species are used in Folk medicine followed by 31 species are used in Siddha, 22 species are used in Ayurveda, 10 species are used in Unani and 6 species are used in Homeopathy. All the medicinal climbers were used to treat over 60 ailments grouped into 14 categories. Maximum number of plant species used in Gastro-intestinal Ailments (GIA) (30 species) followed by Dermatological Infections/ Diseases (DID) (23 species). Among these 43 medicinal climbers, maximum plant parts (leaves from 23 species) were used for medicinal preparations. Maximum number of medicines in the form of juice from 18 plant species was used to treat various diseases.

INTRODUCTION

Wetlands are defined as lands transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or land is covered by shallow water (Mitsch and Gosselink, 1986). Wetland ecosystem forms an important environment for aquatic, semi-aquatic and moisture loving floral and faunal associations (Prasad and Raveendran, 2013). Wetlands also provide an excellent habitat for several species of plants. Local people use a wide variety of wetland/wetland associated plants as ingredients of traditional herbal medicinal preparations (Meena *et al.*, 2010). While reviewing the traditional uses of aquatic plants stated that 'the aquatic plant resources have limited economic value in the

modern world'. Attempts have made by some researchers from different parts of India to collect ethnobotanical information on wetland plants (Gopal and Sharma, 1979; Trivedy, 1983; Jha *et al.*, 1991; Jha and Jha, 1993; Seshavatharam, 1990; Pal and Nimse, 2006; Panda and Misra, 2011)

Ethnomedicine is widely practiced among the tribal populations of our nation. Jain (2001) pointed out over 400 different tribal and ethnic groups in India which constitute about 7.5% of India's population. There has been keen interest among researchers in the area of medicinal plants and their properties in different parts of India. There are also many reports on the use of medicinal plants for treating various ailments either by tribal of

indigenous communities of India (Saikia *et al.*, 2006). Apart from the tribal groups, rural people also possess knowledge about the use of medicinal plants (Kumar *et al.*, 2012).

Ethnomedicinal studies have offered immense scope and opportunities for the development of new drugs (Raja *et al.*, 2011; Balakumar *et al.*, 2011; Joselin *et al.*, 2012). The therapeutics efficacies of many indigenous plants, for various diseases have been described by traditional herbal practitioners (Rajan *et al.*, 2011; Premkumar *et al.*, 2011; Rajan *et al.*, 2012; Pepsi *et al.*, 2012). The recent trend has been to blend the traditional knowledge with modern health care practices to provide effective health care services to a wider population (Chetna and Anoop, 2009).

However, little attention has been paid to the systematic study on aquatic and wetland plants of Kanyakumari district (Sukumaran and Raj 2009; Sathya Geetha *et al.*, 2010; Sukumaran *et al.*, 2010; Ratha *et al.*, 2010; Rekha *et al.*, 2010; Meena *et al.*, 2010). Consequently ethnomedicinal explorations of wetland plants are necessary to gain knowledge on medicinal value of wetland plant species. In view of this fact, the main focus of the present study is to ascertain the detailed information on the ethnomedicinal climbers and their medicinal uses among the select wetlands of Agastheeswaram Taluk.

MATERIALS AND METHODS

Study area

The present study was carried out in select ponds of Agastheeswaram Taluk (77°27' - 77°34' E, 08°05' - 08°12' N) in Kanyakumari District, Tamil Nadu, India. This district occupies an area of about 1672 sq. km. In Agastheeswaram Taluk 183 ponds were located; inlet of water got from the Kothaiyar river basin and these ponds used for irrigation purposes for local people. Out of these 183 ponds only 21 ponds of Agastheeswaram Taluk were selected for the study area is given (Figure 1).

Medicinal plant survey

An extensive systematic field survey of the plants for the period of two years (Oct 2014 to Oct 2016). The plant specimens were collected at various seasons and that different reproductive stages (flower either fruit or both) from their natural habitats. When floristic documentation of ponds in Agastheeswaram Taluk, interviews were conducted with local people, medicine men and elderly settlers near by the ponds for documenting indigenous

knowledge of the local people and utilization value of the plant species. The interviews were made particularly for knowing medicinal value of the climbers and plant parts used of each plant species the results were tabulated with all details (Jain, 1991). Based on the information obtained from the indigenous people and the reviews in the present study area all the ailments were grouped into 14 categories (Senthilkumar *et al.*, 2013)

Preservation and identification of plant materials

The collected specimens are taxonomically identified with the help of various published monographs, taxonomic revisions and floras (Gamble and Fischer, 1915- 1935; Nair and Henry, 1983; Henry *et al.*, 1987; Henry *et al.*, 1989; Mathew, 1993; Mohanan and Henry, 1994; Santapau and Henry, 1994; Kabeer and Nair, 2009) and by using the field keys devised by Subramanyam (1962). Authentication of the identity of plant species were confirmed by specimens deposited in Botanical Survey of India, Southern Circle, Coimbatore, Jawaharlal Nehru Tropical Botanical Garden and Research Institute (JNTBGRD) Palode, Trivandrum, Kerala and Botany Department of Scott Christian College, Nagercoil. Plants with their correct nomenclature, family name were followed by Bentham and Hooker system of classification. The identified species were verified with IPNI (International Plant Name Index). The voucher specimens collected from the field were prepared the herbarium and were deposited in the P.G. & Research Department of Botany, S.T. Hindu College, Nagercoil.

RESULTS AND DISCUSSION

A total of 43 species of angiospermic climbers were collected from the present study area belonging to 36 genera and 18 families. Among these 43 climbers dicotyledons are represented by 40 species belonging to 34 genera and 17 families, while monocotyledons contributed by 3 species belonging to 2 genera and 1 family. The present study revealed that dicotyledons are dominant over monocotyledons. Families with maximum number of species includes Asclepiadaceae with 9 species followed by Convolvulaceae (7 species), Cucurbitaceae and Fabaceae 5 species each. Liliaceae (3 species), Menispermaceae (2 species) and the remaining twelve families were monospecific.

Figure 1. Map indicating the location of Kanyakumari District, Tamilnadu State, where the study area Agastheeswaram Taluk located.



Figure 2. Number of ethnomedicinal climbers used in different Traditional medicines

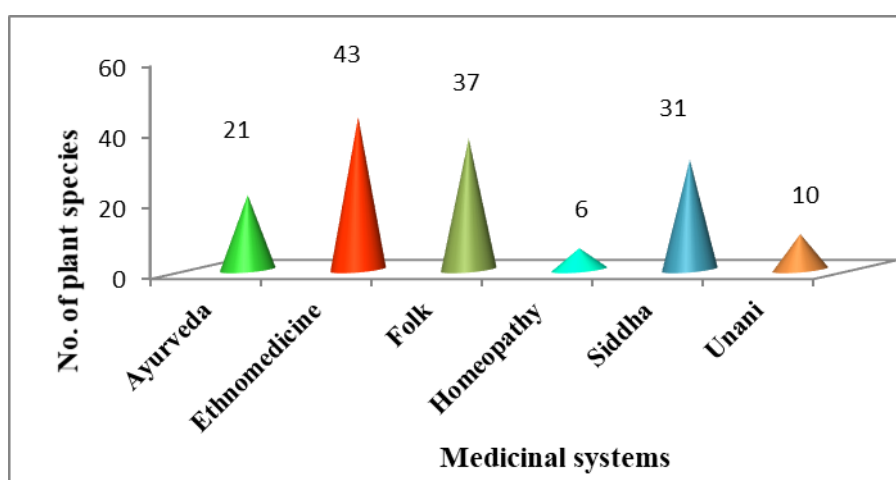


Table - 1 Ethnomedicinal climbers of Agastheeswaram Taluk and their uses in different medicinal systems

S.No	Botanical name	Family	Uses in traditional medicine
1	<i>Abrus precatorius</i> L.	Fabaceae	SD,UN,HP,EM
2	<i>Abrus pulchellus</i> Thwaites	Fabaceae	AY, FL,EM
3	<i>Antigonon leptopus</i> Hook.&Arn.	Polygonaceae	EM
4	<i>Aristolochia indica</i> L.	Aristolochiaceae	SD,UN,FL,EM
5	<i>Asparagus gonocladus</i> Baker	Liliaceae	FL,EM
6	<i>A.racemosus</i> Willd.	Liliaceae	AY,SD,FL,EM
7	<i>Basella alba</i> L.	Basellaceae	AY,SD,FL,EM
8	<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpiaceae	AY,SD,UN,HP,FL,EM
9	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	AY,SD,HP,FL,EM
10	<i>Cassytha filiformis</i> L.	Lauraceae	AY,SD,FL,EM
11	<i>Ceropegia candelabrum</i> L.	Asclepiadaceae	EM
12	<i>C.juncea</i> Roxb.	Asclepiadaceae	FL,EM
13	<i>Cissampelos pareira</i> L.	Menispermaceae	EM
14	<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae	AY,SD,UN,HP,FL,EM
15	<i>Clitoria ternatea</i> L.	Fabaceae	AY,UN,FL,EM
16	<i>Coccinia grandis</i> (L.)Voigt	Cucurbitaceae	AY,UN,EM
17	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	AY,SD,UN,FL,EM
18	<i>Diplocyclos palmatus</i> (L.) C.Jeffrey.	Cucurbitaceae	SD,FL,EM
19	<i>Gloriosa superba</i> L.	Liliaceae	SD,UN,FL,EM
20	<i>Hemidesmus indicus</i> (L.) R.Br. ex schult	Asclepiadaceae	SD,FL,EM
21	<i>Ichnocarpus frutescens</i> (L.) W.T.Aiton	Apocynaceae	AY,SD,FL,EM
22	<i>Ipomoea cairica</i> (L.) Sweet.	Convolvulaceae	FL
23	<i>I. nil</i> (L.) Roth.	Convolvulaceae	AY,SD,UN,FL
24	<i>I. obscura</i> (L.) Ker Gawl.	Convolvulaceae	AY,SD,FL,EM
25	<i>I. pes-tigridis</i> L.	Convolvulaceae	AY,SD,FL,EM
26	<i>I. quamoclit</i> L.	Convolvulaceae	AY,SD,FL,EM
27	<i>Leptadenia reticulata</i> (Retz.) Wight &Arn.	Asclepiadaceae	AY,SD,FL,EM
28	<i>Mikania micrantha</i> Kunth	Asteraceae	AY,SD,UN,FL,EM
29	<i>Mimosa diplotricha</i> Sauvalle.	Mimosaceae	AY,SD,UN,FL,EM
30	<i>Momordia charantia</i> L.	Cucurbitaceae	FL,EM
31	<i>Mukia maderaspatana</i> (L.) M. Roem.	Cucurbitaceae	SD,UN,EM
32	<i>Oxystelma esculentum</i> (L.f.) Sm.	Asclepiadaceae	AY,SD,FL,EM
33	<i>Passiflora foetida</i> L.	Passifloraceae	AY,SD,FL,EM
34	<i>Pentatropis capensis</i> (L.f.) Bullock	Asclepiadaceae	AY,SD,FL,EM
35	<i>Pergularia daemia</i> (Forssk.) Chiov.	Asclepiadaceae	SD,FL,EM

36	<i>Quisqualis indica</i> L.	Combretaceae	SD,FL,EM
37	<i>Rhynchosia minima</i> (L.) DC.	Fabaceae	FL
38	<i>Rivea hypocrateriformis</i> Choisy	Convolvulaceae	SD,FL,EM
39	<i>Sarcostemma acidum</i> (Roxb.) Voigt	Asclepiadaceae	SD,FL,EM
40	<i>Teramnus labialis</i> (L.f.) Spreng	Fabaceae	AY,SD,FL,EM
41	<i>Thunbergia fragrans</i> Roxb.	Acanthaceae	SD,FL,EM
42	<i>Tinospora cordifolia</i> (Willd.) Miers.	Menispermaceae	AY,SD,UN,HP,FL,EM
43	<i>Tylophora indica</i> (Burm.f.) Merr.	Asclepiadaceae	AY,SD,HP,EM

Traditional medicines: AY-Ayurveda; EM- Ethnomedicine; FL- Folklore; HP- Homeopathy; SD- Siddha; UN-Unani.

Figure 3. Morphological useful parts of ethnomedicinal climbers used for traditional medicinal preparations

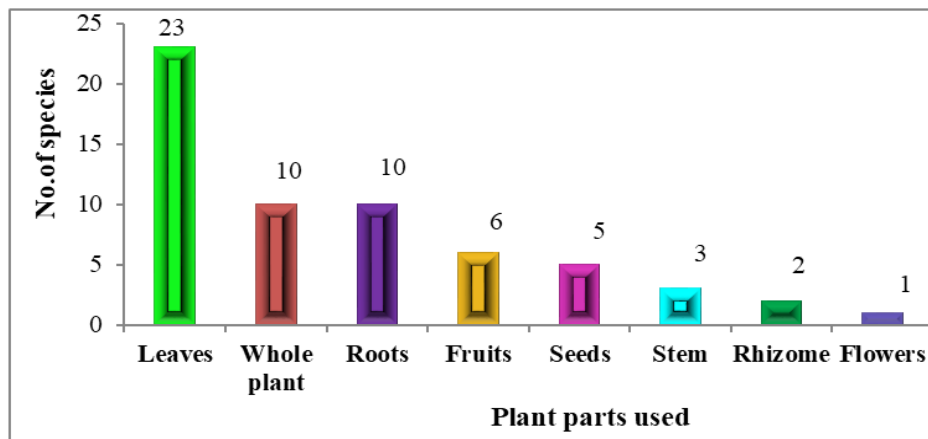


Figure 4. Analysis of method of preparation

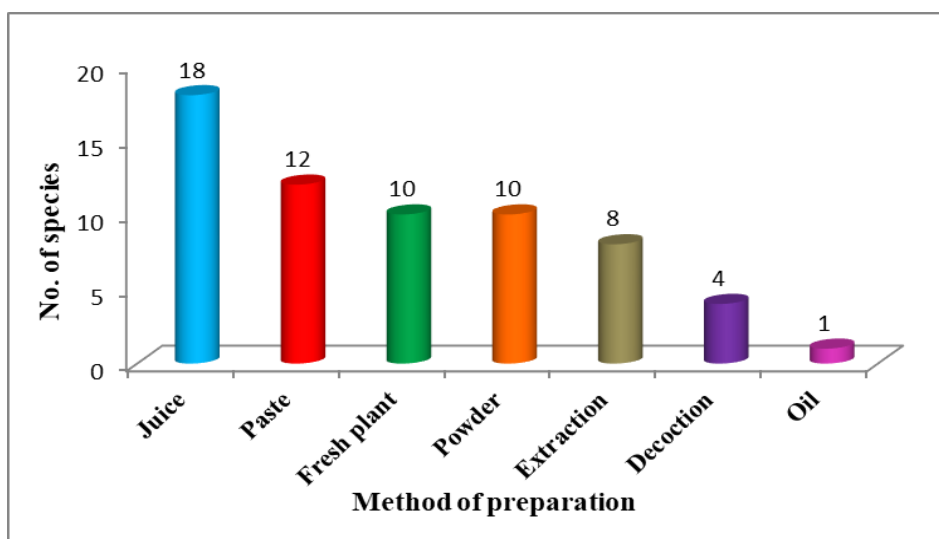


Table - 2 List of indigenously used ethnomedicinal climbers with different ailments

S.No	Botanical name	Parts used	Mode of preparations	Ailments
1	<i>Abrus precatorius</i>	L, S, R	D, J, Pa	Digestion, aphrodisiac, chronic conjunctivitis, skin rashes, skin diseases, white discharge, aphrodisiac
2	<i>Abrus pulchellus</i>	S	Po	Skin diseases
3	<i>Antigonon leptopus</i>	L	Po	Cold, throat infection, Jaundice
4	<i>Aristolochia indica</i>	L, R	Fp, Pa	Skin diseases, snake bite, fever, inflammation
5	<i>Asparagus gonocladus</i>	WP	J	Skin diseases
6	<i>A.racemosus</i>	R,Rh	J, Po	Uterine tonic, hyperactivity, epilepsy, snake bite, lactation
7	<i>Basella alba</i>	L	E	Piles, inflammation, constipation, skin diseases
8	<i>Caesalpinia bonduc</i>	S,L	J, D	Fever, diabetics
9	<i>Cardiospermum halicacabum</i>	WP	D, Pa, J	Stomachache, body pain, diabetes, rheumatic pain
10	<i>Cassitha filiformis</i>	WP	Pa, Po	Jaundice, ulcers, wounds, leucorrhoea
11	<i>Ceropegia candelabrum</i>	L	J	Stomach disorders
12	<i>C.juncea</i>	St	Fp	Digestion, stomach problems
13	<i>Cissampelos pareira</i>	WP	D,E	Rheumatic pain, cooling agent, abscess, diuretic, chronic.
14	<i>Citrullus colocynthis</i>	Fr,S	Fp	Jaundice, urinary diseases
15	<i>Clitoria ternatea</i>	R,L	J, Po, Pa, E	Gonorrhoea, cold, snake bite, eye diseases, headache, fever
16	<i>Coccinia grandis</i>	Fr,L	J, Po	Fever, bronchitis, skin diseases, eczema, pimples, diabetics, diarrhea, sores of tongue, burning of eyes, jaundice
17	<i>Cuscuta reflexa</i>	WP	Po	Jaundice, headache, body ache, constipation
18	<i>Diplocyclos palmatus</i>	Fr	J	Body pain
19	<i>Gloriosa superba</i>	Rh,L,R	J, Pa	Arthritis, gout, snakebite, digestion, stomachache, scorpion stings, treat wounds
20	<i>Hemidesmus indicus</i>	R, L	Pa, J	Diuretic, diaphoretic, asthma, bronchitis, gonorrheal, syphilis, nephritic complaints, ulcers, leucorrhoea, cough
21	<i>Ichnocarpus frutescens</i>	L,R,St	E	Cooling effect, tumours
22	<i>Ipomoea cairica</i>	L	Pa	Cutaneous infection
23	<i>I. nil</i>	WP	Fp	Ulcer
24	<i>I. obscura</i>	L	Fp	Ulcer, eye diseases
25	<i>I. pes- tigridis</i>	L	E	Antidote to dog bite, boils, intestinal worms
26	<i>I. quamoclit</i>	L,R	Pa	Blood purifier, stomachache, Jaundice
27	<i>Leptadenia reticulata</i>	R	Fp	Skin diseases, inflammation
28	<i>Mikania micrantha</i>	L	Fp	Insect bite, wounds
29	<i>Mimosa diplotricha</i>	L	Fp	Hemorrhoides, leprosy, diarrhea, arthritis, fever, intestinal worms, muscle pain
30	<i>Momordia charantia</i>	Fr	J, Pa	Diabetes, worms

31	<i>Mukia maderaspatana</i>	WP	J, E, Po	Giddiness, respiratory problems, carminative, refrigerant, piles, blackening hair
32	<i>Oxystelma esculentum</i>	Fl	Fp	Ulcer
33	<i>Passiflora foetida</i>	L,Fr	J	Headache, anxiety, hypertension
34	<i>Pentatropis capensis</i>	L	E	Urine and kidney problems
35	<i>Pergularia daemia</i>	WP	J	Snake bite, emetic, laxative, itching, arthritic pain, worms
36	<i>Quisqualis indica</i>	S, R	O, Po	Anthelmintic, worms
37	<i>Rhynchosia minima</i>	L	J	Abortifacient
38	<i>Rivea hypocrateriformis</i>	L	Pa	Diarrhea
39	<i>Sarcostemma acidum</i>	St	J	Earache
40	<i>Teramnus labialis</i>	Fr,L	Fp	Rheumatism, tuberculosis, nervous affections
41	<i>Thunbergia fragrans</i>	L	Pa	Treating wounds
42	<i>Tinospora cordifolia</i>	WP	J, E	Urinary disorder, fever, diabetes, dysentery, diuretic, antipyretic, skin diseases, dyspepsia
43	<i>Tylophora indica</i>	WP	D, Po	Dysentery, antidote, snake bite, cough, asthma, bronchitis

Plant parts used: Fl- Flowers, Fr- Fruits, L- Leaves, P- Petiole, Rh- Rhizome, R- Roots, S- Seeds, St- Stem, WP- Whole plant. **Mode of preparation:** D-Decoction, E- Extraction, J-Juice, Fp-Fresh Plant, O-Oil, Pa-Paste, Po-Powder

Table - 3 Ailments grouped by different categories in the study area

Sl.No	Ailments categories	Biomedical terms	Tamil terms	No. of plants used	Total no. of plants
1	Gastro-intestinal Ailments (GIA)	Dysentery	vayirrukkatuppu	2	
		Ulcer	Kodal pun	5	
		Stomachache	Vayirru vali	4	
		Constipation	Malaccikkal	2	
		Intestinal worms	Kudal pulukkal	4	
		Diarrhea	Vayittu pokku	3	
		Dyspepsia	Cerimanaminmai	1	30
		Digestability	Cerimanamuttum	3	
		Carminative	Iraippai kudal vali neeki	1	
		Abortifacient	Karu sethaviuu	1	
		Anthelmintic	Kodal pul neekii	1	
		Emetic	Vanthiyatakki	1	
		Laxative	Malamilakki	2	
2	Dermatological Infections/ Diseases (DID)	Inflammations	Veekkankal	3	
		Skin diseases	Tol noykal	8	
		Pimples/ Acne	Parukkal	1	
		Wounds/ Bruises	Kayankal	5	
		Itching eruption	Arippu vetippu	2	23
		Boils	Koppalanganal	1	
		Diaphoretic	Viyarvaiyakki	1	
		Eczema	Serangu, Padai	1	

		Leprosy	Tollunooi	1	
3	Respiratory systems Diseases (RSD)	Asthma	Ellupu nooi	2	
		Cold	Salli	2	13
		Cough	Irumal	2	
		Bronchitis	Moochu kulal alarchi	6	
		Tuberculosis	Kacanoyi	1	
4	Genito-Urinary Ailments (GUA)	Kidney disorders	Ciruniraka kolaru	1	
		Menstrual problems/Menorrhagia	Matavidai mikaippu	1	
		Lactation	Paal surathal	1	
		Leucorrhoea/gleet	Veali paduthal	2	17
		Gonorrhoea	Mega vetai nooi	3	
		Piles/Hemorrhoids	Moola nooi	3	
		Urinary disorders	Ciruniraka kolaru	3	
		Diuretic	Siru neer perukki	3	
5	Fever (FVR)	Fever	Kayccal	6	7
		Anti pyretic	Odal vepam thanippan	1	
6	Skeleto-Muscular System Disorders (SMSD)	Body pain	Udal vali	4	
		Headache	Thalaivalli	3	
		Rheumatism	Vatha nooi	3	15
		Arthritis/ Gout	Keel vadam/ Mootu veekam	3	
		Nervous affections	Narampu unarvu	1	
		Conjunctivies	Orunkesaivuu	1	
7	Poisonous Bites (PB)	Scorpion sting	Theel koduku	1	
		Snake bite	Pampu kadi	7	10
		Insect bite	Poochi kadi	1	
		Dog bite	Naai kadi	1	
8	Circulatory system/ Cardio vascular diseases(CSCD)	Blood pressure/Hyperactivity	Megai seyalpaadu	3	4
		Blood circulation	Eratha oodam	1	
9	Endocrinal disorders (ED)	Diabetes	Neeralivu nooi	5	5
10	Hair Care (HC)	Hair blackening	Karumai mudi	1	1
11	Ear, Nose, Throat problems (ENT)	Earache	Kaathu vali	1	4
		Eye infections	Kan nooi	3	
12	Cooling agent (CA)	Body cooling	Udal kulichii	2	2
13	Liver problems (LP)	Jaundice	Mancal kamalai	6	6
14	General health (GH)	Epilepsy	Valipu nooi	1	
		Gout	Keel vaatham	1	
		Anxiety	Pathatam	1	6
		Giddiness	Mayakaam	1	
		Abscess/tumours	Katti	2	

Table - 4 Anti-poisonous medicinal climbers collected from the present study area

S.No	Name of the plant	Family	Morphologically useful parts	Poisonous bite
1	<i>Aristolochia indica</i>	Aristolochiaceae	Leaves, roots	Snake bite
2	<i>Asparagus racemosus</i>	Liliaceae	Roots, rhizome	Snake bite
3	<i>Clitoria ternatea</i>	Fabaceae	Root, leaves	Snake bite
4	<i>Gloriosa superba</i>	Liliaceae	Rhizome, leaves	Snake bite, Scorpion sting
5	<i>Ichnocarpus frutescens</i>	Apocynaceae	Leaves, roots, stem	Snake bite
6	<i>Ipomoea pes-tigridis</i>	Convolvulaceae	Leaves	Dog bite
7	<i>Mikania micrantha</i>	Asteraceae	Leaves	Insect bite
8	<i>Pergularia daemia</i>	Asclepiadaceae	Whole plant	Snake bite
9	<i>Tylophora indica</i>	Asclepiadaceae	Whole plant	Snake bite

The dominant genera among 43 medicinal climbers are *Ipomoea* (5 species) followed by *Abrus*, *Asparagus* and *Ceropegia* (2 species each).

All the medicinal climbers collected from the present study area are used in various traditional medicines by local people. Out of 43 medicinal climbers, 37 medicinal climbers are used in Folk medicines, 31 species are used in Siddha, 22 species are used in Ayurveda, 10 species are used in Unani medicines and only 6 species are used in Homeopathy medicines (Table -1 & Figure 2).

Among these 43 wetland medicinal climbers, different plant parts were used for medicinal preparations. Out of 43 wetland medicinal climbers, leaves from 23 species, whole plant and roots from 10 species each, fruits from 6 species, seeds from 5 species, stem from 3 species, rhizome from 2 species, and flowers from 1 species (Table -2 & Figure 3). Maximum medicines are prepared from leaves when compared with other plant parts. The reason behind this was due to the young leaves contains more phytohormones and leaves mostly used to make Siddha formulations (Rajendran *et al.*, 2002). Another reason behind this was the leaves were collected easily than underground parts, flowers, fruits etc. (Giday, 2010). Our results coincide with earlier report of various ethnobotanical studies (Ganesan *et al.*, 2005; Kingston *et al.*, 2007; Ignacimuthu *et al.*, 2008; Johnsy *et al.*, 2012; Shalini *et al.*, 2014; Ahila *et al.*, 2015; Deka and Devi, 2015; Joseph *et al.*, 2015; Chakraborty *et al.*, 2016) where the leaves are mostly used in the treatment of diseases. Many indigenous communities throughout the world also

utilized mostly leaves for the preparation of herbal medicines (Teklehaymanot *et al.*, 2007; Cakilcioglu and Turkoglu, 2010; Gonzalez *et al.*, 2010).

Medicines are prepared in the form of juice from 18 medicinal climbers followed by paste from 12 species, powder and fresh plant from 10 plant species each, extraction from 8 plant species, decoction from 4 plant species and oil from only one plant species. (Table - 2 & Figure 4). In this study, paste and powder were found to be used more often in comparison to oil and decoction. In majority of the cases these medications were prepared by using water as a medium and administrated in all the cases mode of application was oral. Almost all medicinal remedies were based on the preparation of a single plant, few of them in combination with other plant parts. Our result coincides with earlier report of Aadhan and Anand (2017) and Johnsy *et al.* (2013).

Maximum number of plant species used in the Gastro-intestinal Ailments (GIA) (30 species) followed by Dermatological Infections/ Diseases (DID) (23 species), Genito-Urinary Ailments (GUA) (17 species), Skeleto-Muscular System Disorders (SMSD) (15 species), Respiratory systems Diseases (RSD) (13 species), Poisonous Bites (PB) (10 species), Fever (FVR) (7 species), General health (GH) and Liver problems (LP) (6 species each), Endocrinal disorders (ED) (5 species), Circulatory system/ Cardio vascular diseases (CSCD) and Ear, Nose, Throat problems (ENT) (4 species each), Cooling agent (CA) (2 species) and Hair Care (HC) (1 species) (Table - 3).

Of the 9 anti-poisonous climbers collected from the present study area, 7 wetland medicinal climbers viz., *Aristolochia indica*, *Asparagus racemosus*, *Clitoria ternatea*, *Gloriosa superba*, *Ichnocarpus frutescens*, *Pergularia daemia*, *Tylophora indica* are used to treat snake bites. (Table - 4). Similar plants are used to treat snake bite poison was already reported by various workers (Sulochana *et al.*, 2014; Sukumaran *et al.*, 2014; Uma and Parthipan, 2015, Mol and Thomas, 2016; Ida and Arul, 2016).

CONCLUSION

Forty three medicinal climbers collected from the present area are used by the local people for treating various kinds of diseases. Hence, there is a need for detailed investigations of ethnomedicinal knowledge held by these indigenous people before such valuable knowledge is lost forever. Conservation of traditional knowledge is greatly menaced by many factors related to modernization of the region and lack of interest by traditional healers in transferring health knowledge and technology to next generation. A rational and sustainable method of utilization can help improving the life of the indigenous people while maintaining ecological balance of the wetland habitats. It thus becomes necessary to acquire and preserve this traditional system of medicine by proper documentation and identification of specimens. Therefore, greater and constant efforts are required to document traditional knowledge of the ethnomedicinal climbers to prepare a comprehensive account of it, which will throw open new vistas in plant research that can fulfil the purposes of biodiversity conservation and which eco-friendly to the larger global community.

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REFERENCES:

Aadhan K and Anand SP, 2017. Survey of medicinal plants used for the treatment of diabetes by the Paliyar's tribe in Sadhuragiri hills, TamilNadu, India. *Int. J. Herb. med.*, **5**(3):17-35.

Ahila N, R Neelamegam and V Sivanadanam, 2015. Survey of medicinal flora in the foothills of Kalakad village, Tirunelveli district, Tamilnadu, India. *Int. J. Appl. Pur. Sci. & Agri.*, **1**(12):102-113.

Balakumar S, S Rajan, T Thirunalasundari and S Jeeva, 2011. Antifungal activity of *Aegle*

marmelos (L.) Correa (Rutaceae) leaf extract on dermatophytes. *Asian Pac. J. Trop. Biomed.*, **1**(4): 309-312.

Cakilcioglu U and Turkoglu I, 2010. An ethnobotanical survey of medicinal plants in Sivrice (Elazig-Turkey). *J Ethnopharmacol.*, **132**: 165–175.

Chakraborty R, Mondal MS and Sobhan Kr Mukherjee, 2016. Ethnobotanical information on some aquatic plants of South 24 parganas, West Bengal. *Plant Science Today.* **3**(2): 109-114.

Chetna Bisht and Anoop Badoni, 2009. Distribution and Indigenous Uses of Some Medicinal Plants in District Uttarkashi, Uttarakhand, India. *Distribution and Indigenous Uses.*, **1**(6): 38-40.

Deka, N and Nilakshee Devi, 2015. Wild edible aquatic and marshland angiosperms of Baksa district, BT area, Assam, India. *Asian J. Plant Sci. & Res.*, **5**(1):32-48.

Gamble JS and Fischer CEC, 1915-1935. *Flora of the Presidency of Madras* (Vol. 1-3), London: Adlord and Sons Ltd. pp.1389.

Ganesan S, N Suresh and L Kesavan, 2005. Ethnomedicinal Survey of Lower Palni Hills of Tamil Nadu. *Indian J. Trad. Knowled*, **3**: 299-304.

Giday M, Asfaw Z and Woldu Z, 2009. Medicinal plants of the Meinit ethnic group of Ethiopia: an ethnobotanical study. *J Ethnopharmacol*, **124**: 513-521.

Gonzalez JA, Garcia-Barriuso M and Amich F, 2010. Ethnobotanical study of medicinal plants traditionally used in the Arribes del Duero, Western Spain. *J. Ethnopharmacol.*, **131**: 343–355.

Gopal B and Sharma KP, 1979. Aquatic weed control versus utilization, *Econ. Bot.*, **30**:340-346.

Henry AN, GR Kumari and V Chitra, 1987. *Flora of Tamil Nadu, India. Series I: Analysis. Volume 2.* Coimbatore: Botanical Survey of India. pp.258.

Henry AN, V Chitra and NP Balakrishnan, 1989. *Flora of Tamil Nadu, India. Series II: Analysis. Volume 3.* Coimbatore: Botanical Survey of India. pp. 171.

Ignacimuthu, S., M. Ayyanar and K. Sankarasivaraman, 2008. Ethnobotanical Study of Medicinal Plants Used by Paliyar Tribals in Theni District of Tamil Nadu, India. *Fitoterapia*, **79**: 562-568.

Ida Jespin C and A Anami Augustus Arul, 2016. Ethnobotanical study of Kani tribes in Keeriparai of Kanyakumari district, South India. *Int. J. Edu. & Res.*, **2**(3):49-52.

- Jain SK, 1991.** Dictionary of Indian Folk medicine and Ethnobotany: A reference manual of man-plant relationships, Ethnic groups and Ethnobotanists in India, Deep publications; pp. 311
- Jain SK, 2001.** Ethnobotany in modern India, Phytomorphology. *Gold Jubilee Issue Trends Plant Sci.*, **51**:39-54.
- Jha VN, Gupta ANK, Dutta RN, Jha UN, Misra RK and Saraswati KC, 1991.** Utilization and conservation of *Euryale ferox* Salisbury in Mithila (North Bihar, *J. Appl. Biol.*, **39**:295-314.
- Jha VN and Jha A, 1993.** Plant utilized as supplementary vegetables in Darbhanga district of North Bihar, *J. Appl. Biol.*, **3**(1-2):13-15.
- Johnsy G, S Davidson Sargunam and V Kaviyarasan, 2012.** Indigenous knowledge of medicinal plants used for the treatment of skin diseases by the kaani tribe of Kanyakumari district. *Int. J. Pharm. & Pharm. Sci.*, **4**(1):309-313.
- Johnsy G, Beena S and Kaviyarasan V, 2013.** Ethno-botanical survey of medicinal plants used for the treatment of diarrhea and dysentery. *Int. J. Med. & Med. Sci.*, **3**(1): 332-338.
- Joselin J, TSS Brintha, AR Florence, S Jeeva, 2012.** Screening of select ornamental flowers of the family Apocynaceae for phytochemical constituents. *Asian Pac. J. Trop. Biomed.*, **2**(S1): S260-S264.
- Joseph JM, Binu Thomas, Rajendran A and Prabhu Kumar KM, 2015.** Medicinal Chasmophytes of Urumbikara Hills. Idukki district, Kerala, India. *Asian J. Pharm. Sci. & Tech.*, **5**(1):11-17.
- Kabeer KAA and Nair VJ, 2009.** *Flora of Tamil Nadu-Grasses*. Coimbatore: Botanical Survey of India. pp.525.
- Kingston C, BS Nisha, S Kiruba and S Jeeva, 2007.** Ethnomedicinal plants used by indigenous community in a traditional healthcare system. *Ethnobotanical leaflets.*, **11**:32-37.
- Kumar S, Jena PK and Tripathy PK, 2012.** Study of wild edible plants among tribal groups of Similipal biosphere reserve forest, Odisha, India; with special reference to *Dioscorea* species, *Int. J. Biol. Technol.*, **3**:11-19.
- Matthew KM, 1993.** The flora of Tamilnadu Carnatic. Vol. I-III. The Rapinat Herbarium, Tiruchirappalli, Tamilnadu, India.
- Meena R, R Thirumal Thangam and H Prabavathy, 2010.** Indigenous medicinal isages of some meacrophytes of the wetlands in Agastheeswaram, kanyakumari district, TamilNadu. *J. Basic & Appl. Biol.*, **4**(3):117-122.
- Mitsch, W.J. and J.G. Gosselink, 1986.** *Wetlands*. VanNostrand Reinhold, New York, 539.
- Mohanam M. and Henry AN, 1994.** *Flora of Thiruvananthapuram*, Trivandrum: Botanical Survey of India. pp.621.
- Mol R and Binu Thomas, 2016.** Some medico-potential climbers of Kottayam district, Kerala, India. *In. J. Phytopharmacy Res*, **7**(1):29-33.
- Nair NC and AN Henry, 1983. *Flora of Tamil Nadu, India. Series I: Analysis. Volume 1*. Coimbatore: Botanical Survey of India.
- Pal DK and Nimse SB, 2006.** Little known uses of common aquatic plant, *Hydrilla verticillata* (Linn. f.) Royle, *Nat. Prod. Rad.*, **5**(2):108-111.
- Panda A and Misra MK, 2011.** Ethnomedicinal survey of some wetland plants of South Orissa and their conservation. *Indian J. Trad. Knowl.*, **10**(2):296-303.
- Pepsi A, Ben CP and S Jeeva, 2012.** Phytochemical analysis of four traditionally important aquatic species. *Int. Res. J. Biol. Sci.*, **1**(5): 66-69.
- Prasad KS and K Raveendran, 2013.** Wetland plant diversity in Kasragod district, Kerala. *GCK Science Letters.*, **2**(1):44-57.
- Premkumar G, R Sankaranarayanan, S Jeeva and K Rajarathinam, 2011.** Cytokinin induced shoot regeneration and flowering of *Scoparia dulcis* L., (Scrophulariaceae)- an ethnomedicinal herb. *Asian Pac. J. Trop. Biomed.*, **1**(3): 169-172.
- Radha V, Rekha T, Berjini PB, Jeba Juliet Joy D and Sheeja BD, 2010.** Vegetation composition of derelict ponds in sub-urbs of Nagercoil-Kanyakumari district of Tamilnadu, India. In: *Proceedings of the National Seminar on Conservation and Management of Wetlands in an Era of Climatic Change*; Organized by Department of Botany, N. M. Christian College, Marthandam, Kanyakumari, Tamilnadu, India.
- Raja RDA, S Jeeva, JW Prakash., M Johnson and V. Irudayaraj, 2011.** Antibacterial activity of selected ethnomedicinal plants from South India, *Asian Pac. J. Trop. Biomed.*, **4**(5): 375-378.
- Rajan S, H Suganya, T Thirunalasundari and S Jeeva, 2012.** Antidiarrhoeal efficacy of *Mangifera indica* seed kernel on Swiss albino mice. *Asian Pac. J. Trop. Biomed.*, **5**(8): 630-633.
- Rajan S, Thirunalasundari T and S Jeeva, 2011.** Anti-enteric bacterial activity and phytochemical analysis of the seed kernel extract of *Mangifera indica* Linnaeus against *Shigella dysenteriae* (Shiga, Corrig.) Castellani and Chalmers. *Asian Pac. J. Trop. Biomed.*, **4**(4): 294-300.

- Rajendran SM, K Chandrasekar and V Sundaresan, 2002.** Ethnomedicinal Lore of Valaya Tribe in Seithur Hills of Viruthunagar District, Tamil Nadu, India. *Indian J. Trad. Knowled*, **1** : 59-71.
- Rekha T, Radha V, Berjini PB, Jeba Juliet Joy D and Sheeja BD, 2010.** Hydrophyte diversity of Kanyakulam wetlands ecosystem of Kanyakumari district, Tamilnadu, India. In: *Proceedings of the National Seminar on Conservation and Management of Wetlands in an Era of Climatic Change*; Organized by Department of Botany, N. M. Christian College, Marthandam, Kanyakumari, Tamil Nadu, India.
- Santapau H and Henry AN, 1994.** *A dictionary of the flowering plants in India*. New Delhi: CSIR, pp.198.
- Saikia AP, Ryakala VK, Sharma P, Goswami, P and Bora U, 2006.** Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics, *J. Ethanopharmacol*, **106**:149-157.
- Sathya Geetha V, M Reginald Appavoo and S Jeeva, 2010.** Ecological status of Vadsery wetland, Kanyakumari district, Tamilnadu-India, *J. Basic & Appl. Biol.*, **4**(3):69-85.
- Shaini CB, S Chidambaram Pillai and VR Mohan, 2014.** Ethnomedicinal plants used by the Kanikkars of Southern Western Ghats. *Int. J. Pharm. Sci. Rev. Res.*, **28**(2):101-107.
- Senthilkumar K, Aravindhan V and Rajendran A, 2013.** Ethnobotanical survey of medicinal plants used by Malayali Tribes in Yercaud Hills of Eastern Ghats, India. *J. Nat. Remedies.*, **13**(2):118-132.
- Seshavatharam V, 1990.** Traditional use and problem of noxious growth, In: *Ecology and management of aquatic vegetation in the Indian subcontinent*, edited by Gopal, B. (Kluwer Publ., Netherland). 201-218.
- Subrahmanyam K, 1962.** *Aquatic angiosperms*. Council of Scientific and Industrial Research, New Delhi.
- Sulochana AK, Dileepkumar Raveendran, Anoop Pushkaran Krishnamma and Oommen V Oommen, 2014.** Ethnomedicinal plants used for snake envenomation by folk traditional practitioners from Kallar forest region of South Western Ghats, Kerala, India. *J. In. Ethnopharmacology.*, **4**(1): 47-51.
- Sukumaran S and Raj ADS, 2009.** Enumeration of aquatic and semi-aquatic angiosperms in sacred groves of Kanyakumari district, Southern Western Ghats, *J. Eco. & Tax. Bot*, **33**: 26-31.
- Sukumaran S and Uma Devi and Kingston C, 2010.** Wetland medicinal plants of Vilavancode Taluk, Kanyakumari, Tamil Nadu, India. In Paul Raj K. Samuel P.D. and Jeeva S. (ed.). *National Seminar on conservation and management of wetlands in an area of climate change*. City: Publisher. pp. 23.
- Sukumaran S, Thankappan Sarasabai Shynin Brintha, Paulraj Subitha, Yesuthangam Anlin Sheebha and Soloman Jeeva, 2014.** Usage of medicinal plants by two cultural communities of Kanakumari district, TamilNadu, South India. *J. Chem & Pharm. Res.*, **6**(8): 67-79.
- Teklehaymanot T, Giday M, Medhin G, Mekonnen Y, 2007.** Knowledge and use of medicinal plants by people around Debre Libanos monastery in Ethiopia. *J. Ethnopharmacol.* **111**: 271–283.
- Trivedy RK. 1983.** Water hyacinth for control, biogas, paper pulp, animal feed and manure, *Environ Ecol*, **1**:139-141.
- Uma R and Parthipan R, 2015.** Survey on medico- botanical climbers in Pazhayaru river bank of kanyakumari disctrict, Tamilnadu. *J. Med. Plants Stud.*, **3**: 33-36.

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