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Research Article

FLORA OF A VEERIYA VANDAYAR MEMORIAL SRI PUSHPAM COLLEGE CAMPUS

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ABSTRACT

In the present study, I concluded that the selected flora, from A.V.V.M Sri Pushpam College Campus have good vegetation status and the availability of Medicinal Plants and the uses should be documented. In all nearly 170 species representing 154 genera and 63 families were reported to be medicinal plants. Herb - 75, Tree - 44, Shrub - 37 Climber - 8, climbing herb - 2, climbing shrub - 2 and Creeper-2 presented in this area. The conservationists should take necessary action to protect this flora from plastic pollution. For this, an environmental awareness programme should be conducted to the college students to safeguard this flora from pollution and deforestation. Majority of the collected plants are having the medicinal property. It is interesting to note that such a way of life, particularly with respect to healthcare practices has hardly undergone any change even in the present day.

Keywords: SPC Flora, Vegetation status, Medicinal Plants, conservation, uses.

INTRODUCTION

Tribal's dwelling in remote places depend on the forest that includes rich diversity of flora and fauna to meet their livelihood and healthcare needs. Herbal medicines have been used by them since antiquity in treating diseases. However, valid scientific data on the usage of ethnomedicinal plants is rather obscure. Recently, experimentally¹ proved that plants offer immense scope for researchers engaged in validation of traditional claims for the development of novel drugs. Since, interest in traditional medicine has been increasing world-over ethnobotanical studies have gained prominence to explore the traditional knowledge particularly in developing countries. Therefore, collection of ethnobotanical information and documentation of traditional knowledge has gained prominence from the perspective of drug development². India has more than 427 tribal communities with rich diversity of indigenous tradition. However, traditional knowledge base and practices have been margin alized due to political and social-economical reasons. Off late, interest in traditional medicine has been increasing and ethnobotanical studies have been initiated to explore the knowledge base from various tribal groups across the country³. Several studies have revealed that tribal population in remote area, not only depend on plant based resources for medicines, food, forage and fuel, but also play a vital role in the management of natural resources. Tribal communities in Tamil Nadu, India meet their healthcare needs by using non-timber minor forest produces and preparations based on traditional knowledge. Further, it has been established that herbal

drugs obtained from plants are safe with few side effects in treating various ailments⁴. The World Health Organization (WHO) has estimated that 80 % of the populations of developing countries still rely on traditional medicines, mostly plant drugs, for their primary health care needs. Demand for medicinal plant is increasingly felt, in both developing and developed countries due to growing needs of natural products being non-toxic and bereft of side-effects, apart from availability at affordable prices. The medicinal plant sector has traditionally occupied a pivotal position in the socio cultural, spiritual and medicinal areas of rural and tribal families. In view of this fact, the work was carried out to provide a comprehensive account of folklore medicinal plants of Pudukkottai district, Tamil Nadu, India. During the study, an extensive field survey of the medicinal plants was done and the species used as folklore medicines were enumerated⁵.

MATERIALS AND METHODS Locality

The college is located in Poondi, 12 km from Thanjavur (Latitude N 10° 08' to 11° 12') on the way to Nagapattinam (Longitude E 78° 48' to 79° 38') in Tamilnadu state in India on the National Highway 74. The college is linked by buses and trains from Thanjavur. It is in sylvan surroundings of 82 acres (330,000 m²).

Climate

The climate of this district in the state of Tamil Nadu, India is termed as a fairly healthy one like other coastal areas. The month of November, December, January and February are the pleasant months in a year with climate full of warm days and cool nights. From the month of March onwards, the climate becomes sultry and the mercury reaches its peak by the end of May and June depending upon the set of summer rain. The North-East monsoon in the month of October brings complete relief. The South-West monsoon sets in June and continues till the month of September. Rainfall during this period is lower than that of North-East monsoon which sets in the month of October and it continues more or less till the month of February. However, this district is benefited more by North-East monsoon because of its heavy rainfall and the Western Ghats invariably feeds the Kaveri and helps greatly for the vast cultivation of the deltaic area.

Soil

Moisture regime: The Ustic (L. Ustus - burnt, implying dryness) moisture regime is one that is limited but is present at a time when conditions are suitable for plant growth. The soil is dry in some or all parts for 90 or more cumulative days per year. In tropical and subtropical regions, the moisture regime is USTIC if there is one rainy season of three months or more.

Temperature

The atmospheric temperature data was computed and the mean maximum and the mean minimum temperatures were presented in the form of a graph. From the graph, it is seen that the hot months are April, May and June with the maximum temperature ranging from 35 to 36°C and the cool months being November, December and January with the minimum temperature ranging from 23 to 24°C. The atmospheric temperature was used for the calculation of the soil temperature by deducting 5°C. The temperature will give an idea about the soil moisture.

Rainfall

In terms of number of days in continuity, intensity and quantity the rainfall from November 22 - 28 in the delta district of Thanjavur, India is unprecedented. Twenty one centres in the district have recorded a total rainfall of 13,737.29 mm during the week. The total rainfall was 210.33 mm, 159.1 mm, 1266.30 mm, 2426.10 mm, 2667.79 mm, 5218.7 mm (maximum) and 1789 mm from November 22 to 28 respectively. With no let up for seven days, the rain submerged paddy in about 1,10,000 hectares in Thanjavur district, India and displaced 90,000 people who are now being moved to safer places.

Vegetation

The vegetation in the study area is tropical dry places. The dominant tree species include Mangifera indica, Polyalthia longifolia, Samanea saman, Azadiracta indica, Tectona grandis, Cocas nucifera, Cebia pentandra, Guazuma ulmifolia, Artocarpus heterophyllus etc., shrubs include Duranta erecta, Tabernaemontana divaricata, Pennisetum typhoides etc., Herbs include Polycarpia corymbosa, Cleome aspera, Justicia gendarursa, Mimosa pudica, Mollugo nudicaulis, Phyla nodiflora, Commelina ensifolia, Cynodon dactylon, Tephrosia purpurea, Phyllanthus niruri, Leucas aspera, Euphorbia hirta, Acalypha indica, Achyranthus aspera, Datura metel, Tridax procumbens etc., Creepers include Rhynchosia minima, Oldenlandia wightii etc.,

Collection of plants

Regular field visits were made from November to March during the year 2011 - 2012 to explore the floristic strata and the conservation status of the college campus. Further the plants are given in alphabetical order, under their respective families, the latter are arranged according to Bentham and Hooker's system of classification. Each of the plant material was assigned field book number and documented as to family, scientific name, vernacular name (Tamil), part used and medicinal uses plant parts that were identified as having collected and compressed plant species collected were identified with the help of flora book. A wide variety of medicinal plants and herbs used in Ayurvedic, Siddha and Unani are cultivated gathered and sent from here. Even the common medicinal plants acquire a special value when grow here, as the medicinal plants from A.V.V.M. Sri Pushpam College Campus are generally considered to be more potent and effective. The information obtained was confirmed by cross checking with respondents and also with the former patients residing in the same or neighbouring villages of the study area. The plants were not collected from the study area, but photographs were taken without damage to them and identified using the standard floras, text books and already identified specimen. All the plant specimens available in the study areas were collected for authencity and the herbarium specimens are prepared by following the Methodology of Jain and Rao⁶. Photographs and slides were also taken. The herbarium specimens were identified with help of the flora of the Presidency of Madras⁷; the Flora of British India⁸ and the Flora of Tamil Nadu, India Carnatic⁹. The Flora of Tamil Nadu, India by¹⁰ has been referred for the correct bionomial names for the specimens collected. The herbarium specimens were then identified with the help of Dr. S. John - Britto, Rapinat Herbarium Centre St. Joseph College, Trichy, India.

RESULTS AND DISCUSSION

Folristic Analysis

In the present study, the flora of A.V.V.M. Sri Pushpam College, Campus comprises of about 170 plant species belonging to 154 genera and 63 families were identified (Table 1). Among generic wise distribution, the genus Mangifera, Euphorbia, Azadiracchta and Samanea were represented by about 4 species each Ixora, Morinda, Oldenlanida, Spermacoce, Evolvulus, Ipomoea and Merremia by 3 species each Duranta, Lantana, Phyla, Agave, Asparagus, Chlorophytum, Cayota, Cocas and Phoneix by 2 species Scorparia, Striga, Millingtonia, Tabebuia, Heliotropium, Trichoderma, Callistemon and Psidium each with the rest of the genera represented by about single species each respectively. Among habit wise distribution, herbs forms the dominant habit represented by about 45 % with 75 species, followed by trees 26 % with 44 species, shrubs 22 % with 37 species, climber 4 % with 8 species, climbing herb 1 % with 2 species, climbing shrub 1 % with 2 species and creepers 1 % with 2 species respectively (Table 2; Figure 1). Among the family wise distribution, Fabaceae was the dominant family represented by about 25 % with 20 species followed by Solanaceae (11 % with 9 species), Asteraceae (9 % with 7 species), Poaceae (9 % with 7 species), Malvaceae (8 % with 6 species), Cucurbitaceae (8 % with 6 species), Lamiaceae (8 % with 6 species), Amaranthaceae (8 % with 6 species), Euphorbiaceae (8 % with 6 species) and Apocynaceae by 6 % with 5 species each respectively. The plants were found to be used in different forms such as juice, extract, decoction, paste, infusion, powder, etc. all the studied plant species have been arranged alphabetically, along with their binomial, family, vernacular name and uses followed by the names of the tribes in parenthesis.

Conservation

Regeneration Status

The undisturbed status of this campus was clearly evidenced well regeneration capacity of the tree species. At the same time, the regeneration status of the college campus was affected by the plastic pollution and if it continues it may affect the ground flora of campus.

Table 1: List of plants species with family and habit distributed in A.V.V.M. Sri Pushpam College, Campus

S.No	Plants Name	Family	Habit
1.	Abelmoschus esculentus (L.) Moench	Malvaceae	Herb
2.	Acalypha indica L.	Euphorbiaceae	Herb
3.	Acanthospermum hispidum D.C.	Asteraceae	Herb
4.	Achra sapota L.	Sapotaceae	Shrub
5.	Achyranthes aspera L.	Amaranthaceae	Herb
6.	Adhatoda zeylanica L.	Acanthaceae	Shrub
7.	Aerva lanata (L.) Juss. ex Schult.	Amaranthaceae	Herb
8.	Agave americana L.	Asparagaceae	Herb
9.	Ageratum convzoides L.	Asteraceae	Herb
10.	Alloteropsis cimicina (L.) Stapf	Poaceae	Herb
11.	Alternanthera sessilis (L.) R.Br. ex DC.	Amaranthaceae	Herb
12.	Alvsicarpus vaginalis (L.) DC	Fabaceae	Herb
13.	Amranthus viridis L.	Amaracnthaceae	Herb
14.	Annona reticulata L.	Annonaceae	Tree
15.	Annona sauamosa L	Annonaceae	Tree
16.	Artocarnus heterophyllus Lam	Moraceae	Tree
17	Asparagus racemosus Willd	Asparagaceae	Herb
18	Azadirachta indica (L.) Adelb	Meliaceae	Tree
19	Azima tetracantha I am	Salvadoraceae	Shrub
20	Bambusa arundinacea (Betz) Willd	Poaceae	Shrub
20.	Basella alba I	Brasselaceae	Creeper
21.	Blaimillag gamella (L)	Asteraceae	Herb
22.	Boarbavia diffusa I	Nyotaginagaaa	Herb
23.	Buter men en en en (Lem) Tech	Tyctaginaceae	Tree
24.	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Tree
25.	Caesalpina pulcherrima (Linn).Sw	Eabaaaaa	Should
20.	Callistence anasis (Deput)	Fabaceae	Shrub
27.	Calustemon speciosus (Bonpi).	Calamballassas	Tree
28.		Calophyllaceae	Thee the
29.		Asciepiadaceae	Shrub
30.	Canna inaica L.	Cannaceae	Herb
31.	Capsicum annuum L.	Solanaceae	Shrub
32.		Sapindaceae	Hero
33.	Carica papaya L.	Caricaceae	Tree
34.	Caryota urens L.	Arecaceae	Iree
35.		Fabaceae	Herb
36.	Catharanthus roseus (L.) G.Don	Apocynaceae	Shrub
37.	Celba pentanara (L.) Gaerth	Bombaceae	Tree
38.	Chlorophytum comosum (Thunb.)	Asparagaceae	Herb
39.	Cissus quadrangularis L.	Vitaceae	Herb
40.	Citrullus colocynthis (L.) Schrad.	Cucurbitaceae	Climber
41.	Citrus aurantium L.	Rutaceae	Tree
42.	Citrus medica L.	Rutaceae	Iree
43.	Cleome aspera Linn koenig	Capparaceae	Herb
44.	Cleome visoca Linn	Capparaceae	Herb
45.	Clitoria ternatea L.	Fabaceae	Herb
46.	Coccinia grandis (L.) J.Voigt	Cucurbitaceae	Climber shrub
47.	Cocos nucifera L.	Arecaceae	Tree
48.	Commelina ensifolia L.	Commelinaceae	Herb
49.	Costus speciosus (Konig) Sm.	Costaceae	Shrub
50.	Crossandra nilotica Oliv.	Acanthaceae	Herb
51.	Crotalaria verrucosa L.	Fabaceae	Herb
52.	Croton bonplandianum Baillon	Euphorbiaceae	Herb
53.	Ctenolepis garcinii (Burm)	Cucurbitaceae	Climber
54.	Cucumis trigonus Roxb	Cucurbitaceae	Climber
55.	Cynodon dactylon (L). Pers	Poaceae	Herb
56.	Dactyloctenium aegyptium (L.) Willd.	Poaceae	Herb
57.	Datura metel L.	Solanaceae	Herb

30.	Delanin negia (Dei an Heek) Ref	Fabaaaaa	Trac
	Detohix regiu (Boj. ex Hook.) Kai.	Tabaceae	11cc
59.	Digera muricata (L.) Mart.	Amaranthaceae	Herb
60.	Duranta erecta L.	Verbenaceae	Shrub
61.	Echinochloa colona (L.) Link	Poaceae	Herb
62	Eclipta prostrata (L.)	Asteraceae	Herh
62	Emilia songhifolia (L.) DC av Wight	Asteração	Herb
03.	Emitia sonenijolia (L.) DC. ex wight	Asteraceae	TIELD
64.	Eragrostis viscosa (Retz.)	Poaceae	Herb
65.	Erythrina variegata L.	Fabaceae	Tree
66.	Euphorbia hirta L.	Euphorbiaceae	Herb
67	Evolvulus alsinoidas I	Convolvalaceae	Herb
07.		Convolvulaceae	TIELD
68.	Ficus benghalensisL. (Shirot)	Moraceae	Iree
69.	Ficus racemosa Linn	Moraceae	Tree
70.	Gomphrena celosioides Mart.	Amaranthaceae	Herb
71	Guazuma ulmifolia Lam	Malvaceae	Tree
71.		Demoinstrated	II.d
12.	Hellotropium inaicum L.	Boraginaceae	Herb
73.	Hemidesmus indicus L. R.Br.	Apocynaceae	Shrub
74.	Hibiscus rosa-sinensis L.	Malvaceae	Herb
75	Hibiscus tiliaceus I	Malvaceae	Tree
75.		Vialancede	Chu h
/6.	Hybanthus enneaspermus (L.) Muell.	violaceae	Snrub
77.	Indigofera astragaline DC.	Fabaceae	Shrub
78.	Indigofera linnaei Ali	Fabaceae	Shrub
79	Indoneesiella echioides L	Acanthaceae	Herb
80	Inhigonia indica (L) Grover	Liliacoco	Uerh
80.	Ipnigenia inaica (L) Grayex	Linaceae	Hero
81.	Ipomoea pes-tigridis L.	Convolvulaceae	Herb
82.	Ipomoea sepiaria J.Koenig ex. Roxb	Convolvulaceae	Herb
83.	Ixora coccinea L	Rubiaceae	Shrub
84	Iasminum sambas (I.) Aiton	Oleacease	Shrub
04.	Jusminum sumbuc (L.) Alton	Oleaceae	Silluo
85.	Justicia gendarussa Burm.t.	Acanthaceae	Shrub
86.	Kalanchoe floribunda W and A	Crassulaceae	Herb
87.	Lablab purpureus (L.) Sweet	Fabaceae	Climber
89	Lantana camara I	Verbenaceae	Shrub
88.		Verbenaceae	Shi ub
89.	Lawsonia inermis L.	Lythraceae	Shrub
90.	Leucas aspera L.	Lamiaceae	Herb
91.	Leucas rutans L.	Lamiaceae	Herb
02	Luffa cylindrica (L) M L Roem	Cucurbitaceae	Climbing Herb
92.		Cucurbitaceae	Chinoing fiero
93.	Mangifera indica L.	Anacardiaceae	Tree
94.	Manihot esculenta Crantz.	Euphorbiaceae	Shrub
95.	Mariscus maderaspatanus (Wild)	Cyperaceae	Herb
96	Melia azedarach Linn	Meliaceae	Tree
90.	Melathuin wedeness store Coor	Cusurhiteesee	Hark
97.	Meioinria maaeraspaiana Cogn	Cucuibitaceae	пето
98.	Mentha spicata L.	Lamiaceae	Herb
99.	Merremia tridentata L. Hallier	Convolvulaceae	Herb
100	Millingtonia hortensis L.f.	Diamaniaaaaa	Tree
101		Bignoniaceae	1100
	Mimosa pudica I	Fabaceae	Herh
101.	Mimosa pudica L.	Fabaceae	Herb
101.	Mimosa pudica L. Mimusops elengi Linn	Fabaceae Sapotaceae	Herb Tree
101. 102. 103.	Mimosa pudica L. Mimusops elengi Linn Mollugo nudicaulis Lam.	Bignomaceae Fabaceae Sapotaceae Molluginaceae	Herb Tree Herb
101. 102. 103. 104.	Mimosa pudica L. Mimusops elengi Linn Mollugo nudicaulis Lam. Momordica charantia Descourt.	Fabaceae Sapotaceae Molluginaceae Cucurbitaceae	Herb Tree Herb Herb
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133.	Raphanus sativus L.	Brassicaceae	Herb
134.	Rauvolfia tetraphylla L. Apocynaceae		Shrub
135.	Rhynchosia minima (L.) DC.	Fabaceae	Creeper
136.	Samanea saman (Jacq)	Fabaceae	Tree
137.	Sansevieria roxburghiana Schult.	Liliaceae	Herb
138.	Scoparia dulcis L.	Scrophulariaceae	Herb
139.	Sesamum indicum L.	Pedaliaceae	Herb
140.	Sesbania grandiflora (L.) Poiret	Fabaceae	Tree
141.	Sida acuta Burm.f.	Malvaceae	Herb
142.	Sida cordata (Burm.f).	Malvaceae	Herb
143.	Solanum lycopersicum L.	Solanaceae	Herb
144.	Solanum melongena L.	Solanaceae	Herb
145.	Solanum nigrum L.	Solanaceae	Herb
146.	Solanum surattense (Burm)	Solanaceae	Herb
147.	Solanum torvum Sw.	Solanaceae	Shrub
148.	Solanum trilobatum L.	Solanaceae	Shrub
149.	Spathodea campanulata P.Beauv.	Bignoniaceae	Tree
150.	Spermacoce hispida L.	Rubiaceae	Herb
151.	Spilanthes calva DC.	Compositae	Herb
152.	Striga angustifolia (Don) C.J.Saldanha	Scrophulariaceae	Herb
153.	Stylosanthes fruticosa (Retz.) Alston	Fabaceae	Herb
154.	Syzygium cumini L.	Myrtaceae	Tree
155.	Tabebuia rosea DC.	Bignoniaceae	Tree
156.	Tabernaemontana divaricata L.	Apocynaceae	Shrub
157.	Tamarindus indica L.	Fabaceae	Tree
158.	Tectona grandis L.f.	Lamiaceae	Tree
159.	Tephrosia purpurea (L.) Pers.	Fabaceae	Herb
160.	Terminalia catappa L.	Combretaceae	Tree
161.	Tiliacora acuminata (Lam).	Menispermaceae	Climber
162.	Tribulus terrestris L.	Zygophyllaceae	Herb
163.	Trichodesma zeylanicum (Burm.f.)	Boraginaceae	Herb
164.	Tridax procumbens L.	Asteraceae	Herb
165.	Triumfetta pentandra A. Rich.	Tiliaceae	Herb
166.	Verbesina encelioides (Cav.) Benth.	Asteraceae	Herb
167.	Vigna mungo (L.) Hepper	Fabaceae	Herb
168.	Vitex negundo L.	Lamiaceae	Shrub
169.	Waltheria indica L.	Sterculiaceae	Shrub
170.	Zornia gibbosa Spanoghe	Fabaceae	Herb

Table 2: Habit wise distribution of plant species at A.V.V.M Sri Pushpam College Campus

S. No.	Plant species	%
1.	Herbs	45 %
2.	Trees	26 %
3.	Shrubs	22 %
4.	Climbers	4 %
5.	Climbing herb	1 %
6.	Climbing shrub	1 %
7.	Creepers	1 %

Sri Pushpan	1 College	Campus
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Figure 1: Habit wise distribution of plant species at A.V.V.M.

DISCUSSION

In the present study the availability and distribution of individual plant species has to be scrutinized carefully for

its future sustainable utilization. These plants are used as an important medicine for major diseases. There are many which are predominantly used to treat herbs. cardiovascular problems, liver disorders, central nervous system, digestive and metabolic disorders. Given their potential to produce significant therapeutic effect, they can be useful as drug or supplement in the treatment/management of various diseases. Herbal remedies play a fundamental role in traditional medicine in some rural regions of Tamil Nadu, India where the plants often used as therapeutic agents as antiseptic, anti inflammatory and in treatment of infections, diseases including candidiasis and dermatophytes¹¹. In the present study most of the species used in the preparation of herbal medicine are collected fresh, very rarely, dried and stored materials and uses. They diagnose diseases based on the symptoms told by the patients as well as based on their personal experience in treating human ailments. Ristualists believe that specific spirit causes ailments. The whole healing ceremony takes about a day. The preparation of medicines and treatment of diseases connected with the tribal healthcare are accompanied by elaborate rituals and music as previously observed in the case of Mikiris of India¹².

CONCLUSION

In the present study, it was concluded that the selected flora, from A.V.V.M Sri Pushpam College Campus is in good vegetation status and the availability of Medicinal Plants and the uses should be documented. In all nearly 170 species representing 154 genera and 63 families are noticed from both the categories reported to be medicinal plants. Herb-75, Tree-44, Shrub-37, Climber-8, Climbing herb-2, Climbing shrub-2 and Creeper-2 were presented in this area. The conservationists should take necessary action to protect this flora from plastic pollution. For this, an environmental awareness programme should be conducted to the college students to safeguard this flora from pollution and deforestation.

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