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

International Journal of Current Research
Vol. 9, Issue, 03, pp.48313-48317, March, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

AN ETHNOBOTANICAL SURVEY OF HERBALS IN LOYOLA COLLEGE CAMPUS, NUNGAMBAKKAM, CHENNAI, TAMILNADU, INDIA

[1,*]Vijayaraj, R., [2]Manikandan, M. and [3]Jaquline Chinna Rani, I.

[1]Ph.D. research scholar, Department of Plant Biology and Biotechnology & Loyola Institute of Frontier Energy (LIFE), Loyola College, Nungambakkam, Chennai-600034
[2]M.Phil research scholar, Department of Advanced Zoology and Biotechnology & Loyola Institute of Frontier Energy (LIFE), Loyola College, Nungambakkam, Chennai-600034
[3]Assistant professor, Department of Plant Biology and Biotechnology & Loyola Institute of Frontier Energy (LIFE), Loyola College, Nungambakkam, Chennai-600034, Tamilnadu

ARTICLE INFO

Article History:
Received 22nd December, 2016
Received in revised form
19th January, 2017
Accepted 20th February, 2017
Published online 31st March, 2017

Key words:

Anticancer,
Banyan,
Miracle leaf,
Ornamental,
Vardah,
Vines.

ABSTRACT

An ethnobotanical survey of medicinal plants was carried out in Loyola college campus, located at capital of Tamil Nadu state (Chennai), India. This survey was conducted based on participatory observations and field visit to all places of our college campus. A total of 105 medicinal plants species with 93 genus, were identified. The main purpose of this survey is to collect data about medicinal plants available in our college campus in-order to preserve its valuable bioresources. Plant species belonging to diverse families such as Acanthaceae, Euphorbiaceae, Fabaceae, Malvaceae, Solanaceae etc., were found. All these plants having enormous medicinal properties including antibacterial, anticancer, antidiabetic, antiviral, antifungal, antidote, anthelminthic, antianalgesic and they can cure cough, cold, ulcers, diarrhea, skin disorders, snake-bite etc. However, from the observed plant list, some of them are in vulnerable condition like *Abutilon indicum* and *Leucas aspera*. A survey reported that in Chennai 18 peoples were killed and around 12,000 trees were uprooted by a cyclone 'Vardah' in the month of December on 2016, even in Loyola college campus 130 trees uprooted and their stem, branches were broken. The day after this cyclone entire Chennai and Loyola college campus was looking like a forest. From the previous decade natural disasters like flood, cyclone and excess sunlight are often highly disturbing the normal life style and living environment of Chennai peoples. Another side global warming and pollutions are increasing. Due to these reasons some precious plants which are sensitive to these hazards are getting a place in the list of 'an endangered plants'. After few decades some valuable plants may be disappeared in our college campus because of those risks, so we hope that this survey will be helpful to the upcoming batches of Loyolites, through this they can get some ideas and information about medicinal plants of Loyola college campus.

Citation: Vijayaraj, R., Manikandan, M. and Jaquline Chinna Rani, I. 2017. "An ethnobotanical survey of herbals in Loyola college campus, Nungambakkam, Chennai, Tamilnadu, India", *International Journal of Current Research*, 9, (03), 48313-48317.

INTRODUCTION

"*The fragrance of flowers spreads only in the direction of the wind. But the goodness of a person spreads in all directions*" quoted by Chanakya. The main aim of our Loyola college is to provide excellent education to the deserving students, not only in state-level and national-level infact international-level, many students from different countries are doing their graduate here and the college making many eminent men and women to the society. Loyola College ranked number 2 in the NIRF (National Institute of Ranking Frame) 2017 ranking released by the Ministry of Human Resource Development, New Delhi.

Corresponding author: **Vijayaraj, R.**
Ph.D. research scholar, Department of Plant Biology and Biotechnology & Loyola Institute of Frontier Energy (LIFE), Loyola College, Nungambakkam, Chennai-600034

Loyola college is located in the heart of the capital of Tamil Nadu state that is Chennai metropolitan, but the campus is enriched with many trees, vines, ornamental and medicinal plants. An ethnobotanical and ethnopharmacological surveys helps to develop ethnomedicines (Omwenga *et al*., 2014). In traditional medicine plant is required as a major component to cure many diseases caused by bacteria, fungi and virus in human. They are being used by nearly about 80% of the world population, especially in developed and developing countries for primary health care. Herbs are mainly used for disease prevention and treatment (Vanya *et al*., 2015). Young generations showing interest in traditional medicines but among the young population, the knowledge of using traditional plant is very low. The complete knowledge and usage about medicinal plants are well known by older people, but due to the death of an older people, procedures of herbals

usage is under high risk (Shah *et al*., 2013). Many trees and medicinal plants were destroyed by very severe cyclonic storm called 'Vardah' on December 2016 (Fig.1). According to the census taken by the department of Plant Biology and Biotechnology, over 130 trees were found to be uprooted, while 636 were damaged. The biggest and oldest 'Banyan' (Fig.2) tree in our college campus was uprooted by Vardah cyclone.

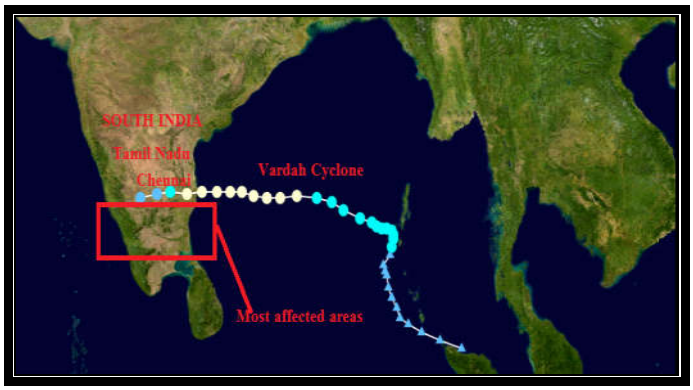

Fig.1. Vardah cyclone severity in Chennai

Fig.2. Biggest tree of the campus 'Banyan' (Aalam) uprooted by 'Vardah cyclone' behind the department of visual communication at Loyola College

MATERIALS AND METHODS

Ethnobotanical Survey

The study of an interactions and relationships between plants and people is known as ethnobotany this includes classification and uses (Johnson *et al*., 2015). An ethnobotanical survey is beneficial in conservation of forest, health care, control of ecological, research in biotechnology and information about medicinal plants can be obtained and through this information potential new drugs may be developed (Gbadamosi and Egunyomi, 2014). All states of India filled with more medicinal plants. A total of 101 species of ethnomedicinal plants belonging to 48 families of Theni district, Tamil Nadu, India was clearly reported (Ignacimuthu *et al*., 2008). 44 angiosperms belonging to 27 families were reported with their plant parts used by the tribal people of Andhra Pradesh in the form of extracts, juices, decoctions, powders and pastes (Lingaiah and Nagaraja Rao, 2013). A total of 102 plant species were recorded with their uses to cure at least 56 human ailments in Ilam District, East Nepal (Bhattarai and Khadka, 2016). In Chittagong division, Bangladesh, both qualitative and quantitative analysis of medical plants used for the treatment of sexual dysfunction, gastrointestinal disorders and skin diseases was clearly analyzed by ethnobotanical survey (Anup *et al*., 2014). The preparation and uses of around 44 medicinal plants among an indigenous people living in Amazonian Ecuador and Peru was clearly studied by ethnobotanical survey (Giovannini, 2015). Before two decades any one can get medicinal plants from the nature which they needed, but from the previous two decades medicinal plants came to the market due to their inadequate availability. A survey reported that around 129 medicinal plants marketed and used to treat main health problems in Bolivia (Manuel *et al*., 2005).

Study Area

The study area of an ethnobotanical survey of medicinal plants was conducted in the college campus of Loyola and information gathered were written by pen in a record note. Total area of the campus is 96 acres. The main building and tallest Gothic style chapel of Loyola college gives additional prettiness to the campus (Fig.3). All buildings and blocks are surrounded by different types of vines, trees and ornamental plants. Field study was carried out over a period of two months from December-2016 to January-2017. In the scope of this study, medicinal plant species and other relevant information were collected. Around 50 scholars are currently doing research in LIFE (Loyola Institute of Frontier Energy) which is located (Fig.4) in our college campus, 80 % amongst them are using medicinal plants as a source of their research work. *Catharanthus roseus* Linn. is one of the most important medicinal plant, plays a vital role (Fig.5) in cancer (oncology), due to the presence of indispensable anticancer drugs, i.e., vincristine and vinblastine. Two different colors (white and pink) of this plant species is widely present in the campus. A rare plant 'miracle leaf' is also available (Fig.6) here.

Fig.3. Vines and ornamentals surrounded the 'Main Building' and 'College Chapel' of Loyola College

Fig. 4. LIFE building, the place we doing our research

Fig.5. Anticancer plant *Catharanthus roseus* (Nithyakalyaani) in front of Main building at Loyola College

Fig.6. Miracle leaf plant *Bryophyllum pinnatum* (Runakkalli)

RESULTS AND DISCUSSION

A total of 105 medicinal plant species under 93 genus belonging to 46 families were identified in the college campus. *Acanthaceae*-4, *Amaranthaceae*-4, *Anacardiaceae*-1, *Annonaceae*-1, *Apocynaceae*-4, *Araceae*-1, *Arecaceae*-1, *Asclepiadaceae*-2, *Asparagaceae*-2, *Asphodelaceae*-1, *Asteraceae*-5, *Balsaminaceae*-1, *Basellaceae*-2, *Boraginaceae*-1, *Caricaceae*-1, *Cleomaceae*-1, *Commelinaceae*-1, *Crassulaceae*-1, *Cucurbitaceae*-2, *Cyperaceae*-1, *Euphorbiaceae*-10, *Fabaceae*-8, *Lamiaceae*-4, *Lecythidaceae*-1, *Lythraceae*-1, *Malvaceae*-6, *Meliaceae*-1, *Moraceae*-2, *Moringaceae*-1, *Musaceae*-1, *Myrtaceae*-3, *Nyctaginaceae*-4, *Oleaceae*-1, *Phyllanthaceae*-3, *Piperacea*-1, *Poaceae*-1, *Portulacaceae*-2, *Rosaceae*-2, *Rubiaceae*-2, *Rutaceae*-3, *Sapindaceae*-1, *Sapotaceae*-2, *Solanaceae*-5, *Verbenaceae*-1,

Table 1. List of medicinal plants in Loyola college campus

S.N	Botanical name	Family	Vernacular name
1	*Abrus precatorius* L.	*Fabaceae*	Gundumani
2	*Abutilon indicum* L.	*Malvaceae*	Thuthi
3	*Acalypha indica* L.	*Euphorbiaceae*	Kuppaimeni
4	*Achyranthes aspera* L.	*Amaranthaceae*	Naaiuruvi
5	*Aerva lanata* L.	*Amaranthaceae*	Sirukanpeezhai
6	*Agave americana* L.	*Asparagaceae*	Aanaikatrazhai
7	*Aloe vera* (L.) Burm.f.	*Asphodelaceae*	Sotrukkatrazhai
8	*Andrographis paniculata* (Burm.f.) Wall. ex Nees	*Acanthaceae*	Nila vembu, Siriyaa nangai
9	*Asystasia gangetica* (L.) T.Anderson	*Acanthaceae*	Mithikeerai, Pattaasukaai
10	*Azadirachta indica* A. Juss.	*Meliaceae*	Vembu
11	*Basella alba* L.	*Basellaceae*	Pasalai keerai
12	*Basella rubra* L.	*Basellaceae*	Kodi pasalai, Sivappu pasalai
13	*Bassia latifolia* Roxb.	*Sapotaceae*	Iluppaimaram
14	*Bauhinia tomentosa* L.	*Fabaceae*	Thiruvaachi
15	*Boerhaavia diffusa* L.	*Nyctaginaceae*	Mookuratai keerai
16	*Bougainvillea glabra* (Choisy)	*Nyctaginaceae*	Kaakithapoo
17	*Bryophyllum daigremontianum* (Raym.-Hamet & H.Perrier) A.Berger	*Crassulaceae*	Runakkalli
18	*Calotropis gigantea* R.Br	*Apocynaceae*	Erukku
19	*Calotropis procera* (Aiton) W.T.Aiton	*Asclepiadaceae*	Velerukku
20	*Cammelina benghalensis* L.	*Commelinaceae*	Kaanaam vaazhai
21	*Capsicum annuum* L.	*Solanaceae*	Green chilly
22	*Cardiospermum halicacabum* L.	*Sapindaceae*	Mudakkaruthaan
23	*Carica papaya* L.	*Caricaceae*	Pappaali
24	*Cassia fistula* L.	*Fabaceae*	Sarakkondrai
25	*Catharanthus roseus* (L.) G.Don	*Apocynaceae*	Nithyakalyaani
26	*Ceiba pentandra* L.	*Malvaceae*	Ilavam
27	*Celosia cristata* (L.) Kuntze	*Amaranthaceae*	Kozhikondai poo
28	*Chrysanthemum coronarium* L.	*Asteraceae*	Saamanthi poo
29	*Cissus quadrangularis* L.	*Vitaceae*	Pirandai
30	*Citrus medica* L.	*Rutaceae*	Elumichai
31	*Cleome gynandra* L.	*Cleomaceae*	Kaattukadugu
32	*Clitoria ternatea* L.	*Fabaceae*	Sangu poo
33	*Coccinia grandis* Wight & Arn.	*Cucurbitaceae*	Kovaikaai
34	*Coleus ambonicus*(Lour.) Spreng.	*Lamiaceae*	Karpura valli
35	*Couroupita guianensis*Aubl.	*Lecythidaceae*	Naagamalli

Continue……

36	*Crossandra infundibuliformis* (L.) Nees	*Acanthaceae*	Kanakambaram
37	*Cynodon dactylon* L.	*Poaceae*	Arugampul
38	*Cyperus rotundus* L.	*Cyperaceae*	Korai
39	*Datura metel* L.	*Solanaceae*	Oomatham
40	*Delonix regia* (Boj. ex Hook.) Raf.	*Fabaceae*	Poomaram, Vaathanarayan
41	*Diplocyclos palmatus* (L.) C.Jeffrey	*Cucurbitaceae*	Aiviralkkovai
42	*Eclipta prostrata* (L.) L.	*Asteraceae*	Karisalankanni
43	*Epipremnum aureum* (Linden & André)	*Araceae*	Maniplant
44	*Eucalyptus globulus* Labill.	*Myrtaceae*	Neelagiri
45	*Euphorbia antiquorum* L.	*Euphorbiaceae*	Sathurakalli
46	*Euphorbia heterophylla* L.	*Euphorbiaceae*	Paalperukki
47	*Euphorbia hirta* L.	*Euphorbiaceae*	Ammanpacharisi, Chithiraipaalaadai
48	*Euphorbia neriifolia* L.	*Euphorbiaceae*	Ilaikalli
49	*Euphorbia tirucalli* L.	*Euphorbiaceae*	Kalli
50	*Ficus benghalensis* L.	*Moraceae*	Aalam
51	*Ficus religiosa* L.	*Moraceae*	Arasam
52	*Gomphrena globosa* L.	*Amaranthaceae*	Vaadamalli
53	*Heliotropium indicum* L.	*Boraginaceae*	Thelkodukku
54	*Hibiscus rosa sinensis* L.	*Malvaceae*	Semparuthi
55	*Impatiens balsamina* L.	*Balsaminaceae*	Baalsampoo
56	*Ixora coccinea* L.	*Rubiaceae*	Idlypoo
57	*Jasminum sambac* Ait.	*Oleaceae*	Malligai
58	*Jatropha gossypifolia* L.	*Euphorbiaceae*	Kattuaamanakku
59	*Justicia adhatoda* L.	*Acanthaceae*	Adathoda
60	*Lantana camara* L.	*Verbenaceae*	Ounnichedi
61	*Lawsonia inermis* L.	*Lythraceae*	Maruthaani, Maruthondri
62	*Leucas aspera* (Willd.) Link	*Lamiaceae*	Thumbai
63	*Limonia acidissima* L.	*Rutaceae*	Vilaam pazham
64	*Madhuca longifolia* (J.Konig) J.F.Macbr.	*Sapotaceae*	Naattuiluppai
65	*Mangifera indica* L.	*Anacardiaceae*	Maa
66	*Manihot esculenta* (Crantz)	*Euphorbiaceae*	Maravalli
67	*Mirabilis jalapa* L.	*Nyctaginaceae*	Anthimalli
68	*Morinda tinctoria* L.	*Rubiaceae*	Nunaa
69	*Moringa oleifera* Lam.	*Moringaceae*	Murungai
70	*Murraya koenigii* (L.) Sprengel	*Rutaceae*	Karuvepilai
71	*Musa paradisiaca* L.	*Musaceae*	Vaazhai
72	*Nerium oleander* L.	*Apocynaceae*	Arali
73	*Ocimum sanctum* L.	*Lamiaceae*	Thulasi
74	*Parthenium hysterophorus* L.	*Asteraceae*	Kenathuppoondu
75	*Phoenix pusilla* Roxb.	*Arecaceae*	Kaatu eechamaram
76	*Phyllanthus acidus* (L.) Skeels	*Phyllanthaceae*	Arainellikaai
77	*Phyllanthus emblica* L.	*Phyllanthaceae*	Kaatunelli
78	*Phyllanthus niruri* L.	*Phyllanthaceae*	Keezhanelli
79	*Phyllanthus reticulatus* (Poir)	*Euphorbiaceae*	Pallukuchithazhai
80	*Physalis minimam* L.	*Solanaceae*	Tharmathakkali
81	*Piper betle* L.	*Piperacea*	Vetrilai
82	*Pisonia alba (*Span.)	*Nyctaginaceae*	Latcha kottai keerai
83	*Psidium guajava* L.	*Myrtaceae*	Koiya
84	*Plumeria rubra* L.	*Apocynaceae*	Paneerpoo, Kaathuvalipoo
85	*Polyalthia longifolia* (Sonn.)	*Annonaceae*	Nettilingam
86	*Pongamia pinnata* (L.) Merr.	*Fabaceae*	Pungamaram
87	*Portulaca grandiflora* Hook.	*Portulacaceae*	Patturoja
88	*Portulaca umbraticola* Kunth.	*Portulacaceae*	Buttonrose
89	*Prunus amygdalus* Stokes.	*Rosaceae*	Baadam, Vaathumai
90	*Ricinus communis* L.	*Euphorbiaceae*	Aamanakku
91	*Rosa damscena* Mill.	*Rosaceae*	Roja
92	*Samanea saman* F.Muell.	*Fabaceae*	Thoongu moonji maram
93	*Sansevieria roxburghiana* Sch.	*Asparagaceae*	Marul
94	*Sarcostemma intermedium* Decne.	*Asclepiadaceae*	Kodi kalli
95	*Sesbania grandiflora* (L.) Poiret	*Fabaceae*	Akathikkeerai
96	*Sida acuta* Burm.f.	*Malvaceae*	Aruvaamanaipoondu
97	*Sida cordifolia* L.	*Malvaceae*	Nilathuthi
98	*Solanum nigrum* L.	*Solanaceae*	Manathakkali
99	*Solanum trilobatum* L.	*Solanaceae*	Thoothuvali
100	*Syzygium cumini* (L.) Skeels.	*Myrtaceae*	Naaval
101	*Thespesia populnea Soland*. ex Correa.	*Malvaceae*	Poovarasu
102	*Tribulus terrestris* L.	*Zygophyllaceae*	Nerunjil
103	*Tridax procumbens* L.	*Asteraceae*	Mookuthipoo
104	*Vitex negundo* L.	*Lamiaceae*	Nochi
105	*Xanthium strumarium* L.	*Asteraceae*	Seepukaai

Vitaceae-1, *Zygophyllaceae*-1. The result of this survey is presented in table-1 and all herbals are alphabetically listed (Table-1) by botanical names. More number of species recorded under the *Euphorbiaceae and Fabaceae* families.

Conclusion

Gathering, processing and consuming medicinal plants are still practiced in all states of India. Due to an increasing health

service facilities, herbal medicines are mostly used to prevent diseases than cure. From this survey we concluded that Loyola college campus is enriched with very precious and medicinally useful herbals. An additional research analysis is required to preserve the bioresources that is slowly declining in this area of campus.

Acknowledgement

We are heartily thanking to our college principal Rev. Dr. M. Arockiasamy Xavier for opportunity provided us to pursue our research in this popular institute and more thanks to our director of LIFE Rev. Dr. John Pragasam for his continuous support and encouragement in our research activities.

REFERENCES

Anup, K.D., Mamun, Md., Rashid, Or., Shalahuddin, M.Md. and Mamunur, R.Md. 2014. "Ethnobotanical Survey of Medicinal Plants Used by Traditional Health Practitioners and Indigenous People in Different Districts of Chittagong Division, Bangladesh". *International Journal of Pharmaceutical Science Invention*, PP 1-7.

Bhattarai, K.R. and Khadka, M.K. 2016. "Ethnobotanical Survey of Medicinal Plants from Ilam District, East Nepal". *Our Nature,* Vol 14 (1): 78-91.

Gbadamosi, I.T. and Egunyomi, A. 2014. "Ethnobotanical Survey of Plants Used for the Treatment and Management of Sexually Transmitted Infections in Ibadan, Nigeria". *A Journal of Plant, People and Applied Research,* Pane 659-670."

Giovannini, P. 2015. "Medicinal Plants of The Achuar (Jivaro) of Amazonian Ecuador: Ethnobotanical Survey and Comparison with Other Amazonian Pharmacopoeias". *Journal of Ethnopharmacology*, 164 (4), 78-88.

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

Johnson, G.M., Nanadagopalan, V. and Doss, A. 2015. "Ethnobotanical Survey of Medicinal Plants Used by Traditional Healers in Shobanapuram Village of Pachamalai Hill, Tamilnadu". *Advances in Applied Science Research,* Vol 6 (3): 157-164.

Lingaiah, M. and Nagaraja Rao, P. 2013. "An Ethnobotanical Survey of Medicinal Plants Used by Traditional Healers of Adilabad District, Andhra Pradesh, India, *An International Quarterly Journal of Biology & Life Sciences*, 1 (1): 17-23.

Manuel, J., Maciaa, Emilia, G. and Prem, J.V. 2005. "An Ethnobotanical Survey of Medicinal Plants Commercialized in the Markets of La Paz and El Alto, Bolivia". *Journal of Ethnopharmacology*., 97, 337-350.

Omwenga, E.O., Mbugua, P.K. and Okemo, P.O. 2014. "Ethno-Medicinal Survey of Important Plants of Samburu Community (Wamba)-Samburu District in Kenya". *Journal of Botanical Sciences*, PP 24-29.

Shah, Z., Ali, H. and Shariatullah. 2013. "Ethnobotanical Survey of Medicinal Plants from Tehsil Dargai, District Malakand, Pakistan". *Fuuast J. Biol.*, 3 (1): 109-113.

Vanya, K., Asya, D., Zheni, N., Teodora, K. and Georgi, D. 2015. "An Ethnobotanical Study on Current Status of Some Medicinal Plants Used in Bulgaria". *Int.J.Curr.Microbiol. App.Sci*., 4 (4): 297-305.

****