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SURVEY OF DIVERSITY AND STATUS OF UNANI MEDICINAL PLANTS IN SALEM FOREST DIVISION, SALEM DISTRICT, TAMIL NADU

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ABSTRACT

The Unani system of medicine pioneered in Greece and was developed by Arabs in to an elaborate medical science based on the frame work of teaching of Buqrat (Hippocrates) and Jalinoos (Galen). The principal source of drugs in the Unani system of medicine are plant, animal and minerals. Historically plants have played an important role in medicine. Through observation and experimentation, human beings have learnt that plants play a vital role in promoting health and well-being. The present study deals to explore the biodiversity and status of the medicinal plants in the geologist's paradise, surrounded by hills and the landscape having geographical area of the 5, 20, 530 hectares. For the same an ethnobotanical survey was conducted in the Salem forest division, Salem District, Tamil Nadu, India from 27th January 2020 to 15th February 2020. Through this ethnobotanical survey programme 111 Unani medicinal plants species belonging to 51 families, 105 genera were collected, documented and analyzed for their diversity status. In which 58 common species, 22 rare species, 8 sporadic and 23 commonly cultivated species were collected. Additionally, on the basis of the life form, the study revealed that 43 tree, 33 herbs, 19 shrubs, 11 climbers, 2 creeping herb, 1 parasitic climber, 1 twiner and 1 straggler species were recorded during the study. This disclose the biodiversity of that area in relation to the rare and endangered plants.

KEYWORDS: Biodiversity, Salem District, Tamil Nadu, Unani medicinal plants.

INTRODUCTION

The biodiversity is a part of our daily lives and livelihood. Every country has the responsibility to conserve, restore and sustainably use the biological diversity within its jurisdiction (Gwalwanshi *et al.,* 2014 and Ahmad *et al.* 2006). Biodiversity constitutes various resources upon which families, communities, and future generations depend for meeting their livelihoods. Human beings are very much associated with the plant kingdom for its survival from the very beginning of its appearance on this earth (Elizabeth & Dowdeswell, 1995). India is one of the mega biodiversity-rich nations in the world where the medicinal plants are part of our tradition and even being respected today. The main traditional systems of medicine in India include Ayurveda, Siddha, Unani, and Homeopathy. 75% of the medicinally important plant species in India grows in almost wild conditions (Laloo *et al*., 2006; Kannan & Jeeva, 2008). The WHO defines traditional medicine as knowledge, skills and health practices, explored to maintain health, treat, diagnose, and prevent diseases (WHO, 2003).

Medicinal plants have been the subject of man's curiosity since time immemorial (Constable, 1990). Almost every civilization has a history of medicinal plant usage for treatment of deadly diseases and disorders (Ensminger *et al.*, 1983). Since time immemorial, ancient people mainly depend on herbal remedies for the treatment of diseases and disorders (Singh *et al*., 2012). Approximately 80% of the people in the world's developing countries rely on traditional medicine for their primary health care, and about 85% of traditional medicine involves the use of plant extracts for the management of diseases (WHO, 2023). India has 2.4% of world's area with 8% of global biodiversity and it is one of the 12th mega diversity hotspot countries of the world with a rich diversity of biotic resources. India is endowed with rich wealth of medicinal plants which are widely used by all section of peoples either directly as folk remedies or different indigenous system of medicine or indirectly in the pharmaceutical preparations of modern medicines (Alagesa boopathy, 2011).

The Unani system of medicine is a traditional medical practice that originated in Greece but has been widely adopted and developed in the Islamic world, particularly in the Middle East, South Asia, and parts of Central Asia. The system is based on the teachings of ancient Greek physicians such as Hippocrates and Galen, but it was further refined by Arabic and Persian scholars such as Ibn Sina (Avicenna), Al-Razi, and Al-Biruni. The World Health Organization (WHO) has recognized the Unani system of Medicine as an alternative system to cater the health care needs of human population. The principal source of drugs in the Unani system of medicine are plant origin, animal origin and mineral origin. Crude drugs when used alone is as called Ilaj bil Mufrrad (treatment by single drug), when two or more than two drugs are combined together it is called Ilaj bil Murakkabat (treatment by compound drugs). Various drug formulations are used in the Unani system medicine for different ailments (Husain *et al.,* 2010). The Central Council for Research in Unani Medicine, New Delhi is continuously involved in ethno-botanical surveys through survey and cultivation of medicinal plants programme by its different Regional Institutes throughout India particularly tribal dominated areas of Andhra Pradesh, Tamil Nadu, Jammu & Kashmir, Karnataka and Utter Pradesh. Accordingly, the Kalvarayan and Shervorayan hills of Salem forest division, Salem district, Tamil Nadu was surveyed to study the diversity, status of Unani medicinal plants and to collect herbarium specimens and raw drugs for the clinical and drug standardization research activities in the different institutes of the council.

The Ethnobotanical survey was conducted in six different ranges *viz*., Vazhapady Range, Thambampatty range, Kalrayan range, Attur range, Yercaud range and Shervarayan North range of Salem district Tamil Nadu. During the

ethnobotanical survey programme, the survey team has surveyed about twenty forest areas to assess, document and enumerate information of the Unani medicinal plants wisdom of Salem forest division.

Present knowledge on Diversity of medicinal plants

Lots of biodiversity studies has already been done in Western and eastern Ghats, of the southern region. This region has a wide variety of plant species, including tropical rainforests, montane forests, grasslands, and temperate forest. The richness of floristic diversity of the region has been brought out by Gamble, 1915-1936; Nair & Daniel, 1986; Rao, 1984. Further, the same has been documented in several state and district floras of Tamil Nadu (Gamble, 1915-1936; Matthew, 1981-1984 & 1999). Diversity of medicinal plants studies has also been documented from various other parts of Indian sub-continent (Sharma & Thokchom 2014, Padhan & Panda 2016, Dwivedi & Salim 2016, Venkatesan *et al.*, 2018, 2019, 2023; Vijayashalini & Abirami 2018; Ansari *et al*., 2023; Ahmed *et al.*, 2024). A perusal of the research literature reveals that diversity of medicinal plants studies among various forest areas have been reported from the different researchers but prior to that no study had been done on the exploration of diversity of Unani medicinal plants in Salem forest division, Salem District, Tamil Nadu.

Salem District

The name Salem is derived from the word Sailam which means to the place surrounded by hills. Salem is a Geologist's paradise, surrounded by hills and having landscape dotted with hillocks. Salem has a vibrant culture dating back to the ancient Kongu Nadu. It is in the North latitude between 110° 14’ and 12° 53’, and East longitude between 77° 44' and 78° 50'. The total geographical area of the district is 5,20,530 hectares among these 125,682 hectares is covered by the forest. It is bounded by Dharmapuri district on the North, Namakkal district on the South, Erode district on the West and by Villupuram district on the East. The elevation of landscape generally ranges from 500 ft to 1200 ft. above msl, with the exception of Yercaud, which is at 5000 ft. above msl. Salem is the 5th largest city in Tamil Nadu locate at the bank of Thiru Manimuthar river. Local tradition claims Salem as the birthplace of Tamil poetess Awaiyar.

This district experiences low rainfall of 925 mm and having the semiarid climate. The temperature often exceeds 20° C. In the agriculture paddy, jowar, tapioca, sugarcane, groundnut and cotton are the major commercial crops. Horticultural crops like pineapples, mangoes, citrus fruits and brinjal are also cultivated. The district has reservoir of Magnesite, bauxite, quartz, limestone, soapstone, rough stone and granite are the minerals.

Salem Forest Division

Salem forest division comprises of nine forest ranges which includes Vazhapady Range, Thambampatty range, Kalrayan range, Attur range, Yercaud range, Shervarayan North range, Shervarayan south range Danishpet range and Mattur range. But the survey team surveyed in six forest ranges *viz.*, Vazhapady range, Thambampatty range, Kalrayan range, Attur range, Yercaud range, Shervarayan North range. The Malayali tribal communities inhabited in the forest areas of all the ranges of Salem forest division. The tribal and rural communities of this district are basically farmers and economically belongs to backward status. They are also involved in collection of honey, bee wax and minor forest products and also engaged in the cultivation of paddy, sugarcane, tapioca, banana, coffee, pepper, millet, sorghum, turmeric, mango, vegetables, maize, groundnut, gingelly etc.

The Ethnobotanical survey was conducted in Vazhapady Range, Thambampatty range, Kalrayan range, Attur range, Yercaud range, Shervarayan North range, During the ethnobotanical survey programme, the survey team has surveyed

about twenty forest areas belongs to six forest ranges such Ananaivari Muththal, Pattimedu tribal colony, Kariyakoil, Moolapadi, Iyankaradu, Ramanathampalayam, Mamarathumadai forest areas in Attur range, Santhumalai, Pungan madavoo, Puthukadu forest areas in Vazhapady range, Pachamalai, Odai kadu, Kudalmalai, Naripadi, Nanalkarai forest areas in Thambampatty range, Karumanthurai, Theerthakarai, Killakadu, Periyakalvarayan, Maniyarkundam, Sellankurichi, Theakampattu forest areas in Kalrayan range, Manjanaththi, Vellaikadu, Semmanathai, Kottachedu, Koothumedu forest areas in Yercaud range, Bodhaikadu, Kombai, Arimalai, Vappampadi, Manjavadi forest areas in Shervarayan North range. In the field exploration activities, the survey team identified and collected medicinal plants explored in the Unani system of medicine and in the folk medicines.

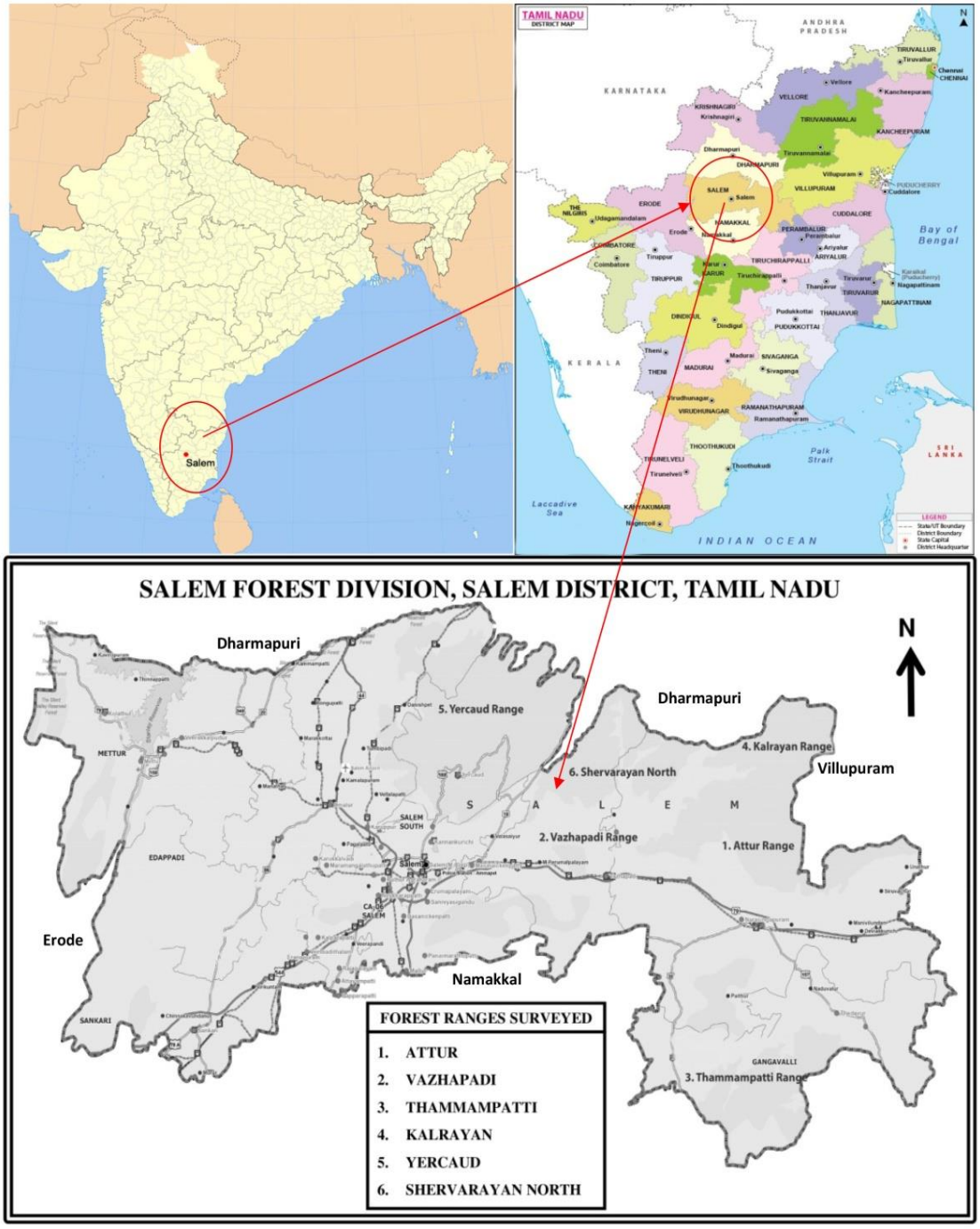

Figure 1: MAP showing the area of study of Salem forest division, Salem district Tamil Nadu.

METHODOLOGY

The study was conducted for a period of twenty days from 27th January 2020 to 15th February 2020 through the research team of survey of medicinal plants unit, Regional Research Institute of Unani Medicine under the CCRUM (Ministry of AYUSH) New Delhi, to collect information on diversity and status of Unani medicinal plants in the Kalvarayan and Shervorayans hills of Salem forest division, Salem district, Tamil Nadu (Figure 1).The collected Unani medicinal plant species were identified taxonomically using the Flora of Presidency of Madras (Gamble, 1936) and the Flora of Tamil Nadu Carnatic (Matthew, 1983) and Unani names were cross checked with already existing Unani literatures (Anonymous, 1981. 1987, 1992, 1997). The identified plant specimens were confirmed through referral tour programme with herbaria of Botanical survey of India, Coimbatore. The specimens were deposited in the herbarium of survey of medicinal plant unit, Regional Research Institute of Unani Medicine, Chennai. During the survey about 20 forest areas belong to 6 forest rangers were surveyed. During the field study about 262 species of plant specimens have been collected and identified. Among these 111 species of Unani medicinal plants were identified and documented. The botanical identity of all the plant species are identified with help of modern floras also. The plants were arranged alphabetically according to their botanical names with collection number, followed by family, Unani name, Local name, Habit, status and described based on their occurrence in the nature (Table-I).

Table 1: List of Unani medicinal plants, their habit and status in Salem Forest Division, Salem District, Tamil Nadu, India.

S. No.	Botanical Name/Family Name/ Voucher Specimen No.	Unani Name	Local Name	Habit	Status
1	*Abrus precatorius* L. / Papilionaceae / RRIUM CH: 13473	Gungchi	Kundumani	Twiner	C
2	*Abutilon indicum* (L.) Sweet / Malvaceae / RRIUM CH: 13471	Kanghi	Tuthi	Shrub	C
3	*Acacia leucophloea* (Roxb.) Willd. / Mimosaceae / RRIUM CH: 13462	Kath	Velvalam	Tree	C
4	*Achyranthes aspera* L. / Amaranthaceae / RRIUM CH: 13431	Chirchita	Nayuruvi	Herb	C
5	*Aegle marmelos* (L.) Correa / Rutaceae / RRIUM CH: 13513	Belgiri	Vilvam	Tree	C
6	*Aerva lanata* (L.) Juss. / Amaranthaceae / RRIUM CH: 13426	Bisheri Buti	Sirupellai	Herb	C
7	*Alangium saviifolium* (L.f.) Wang. / Alangiaceae / RRIUM CH: 13653	Ankol	alinjal	Tree	S
8	*Albizia lebbeck* Benth. / Mimosaeae / RRIUM CH: 13659	Siras	Vagai	Tree	C
9	*Amaranthus spinosus* L./ Amaranthaceae / RRIUM CH: 13444	Chaulai Kharda	Mullu keerai	Herb	C
10	*Anacardium occidentale* L. / Anacardiaceae / RRIUM CH: 13522	Kaju	Munthiri	Tree	C
11	*Ananas comosus* (L.) Merr. / Bromeliaceae / RRIUM CH: 13537	Anannas	Anachoazham	Herb	C &C
12	*Andrographis paniculata* (Burm.f.) Nees. / Acanthaceae/ RRIUM CH: 13447	Kalmegh	Nilavambu	Herb	C
13	*Anogeissus latifolia (*DC.*)* Wallich *ex* Guill. & Perr. / Combretaceae / RRIUM CH: 13403	Dhawa	Vet-kali	Tree	S
14	*Argemone mexicana* L. / Papaveraceae/ RRIUM CH: 13443	Satyanasi	Piramathandu	Herb	C
15	*Artemisia nilagirica* (Clarke) Pamp./ Asteraceae / RRIUM CH: 13582	Nagdaun	-	Shrub	C
16	*Artocarpus heterophyllus* Lam. / Moraceaea / RRIUM CH: 13525	Kathal	Pilamaram	Tree	C

17	*Bambusa bambos* (L.) Voss / Poaceae / RRIUM CH: 13641	Tabashir	Moongil	Tree	C
18	*Bauhinia racemosa* Lam. / Papilionaceae / RRIUM CH: 13497	Kachnal	Aathi	Tree	C
19	*Boerhavia diffusa* L. / Nyctaginaceae / RRIUM CH: 13410	Handakaku	Mookerattai	Herb	C
20	*Brassica nigra* (L.) K.Koch / Brassicaceae/ RRIUM CH: 13405	Khardal, Rai	Kadugu	Herb	C& C
21	*Bryophyllum pinnatum* (Lam.) Oken / Crassulaceae / RRIUM CH: 13474	Zakhm-e-Hayaat	Kattipottal, kuttipodum	Herb	R
22	*Caesalpinia bonduc* (L.) Roxb. / Papilionaceae / RRIUM CH: 13442	Karanjawa	Kazharchikai	Climber	R
23	*Cajanus cajan* (L.) Millsp. / Papilionaceae / RRIUM CH: 13434	Arhar	Thuvarai	Shrub	C & C
24	*Calotropis gigantea* (L.) Dryand. / Asclepiadaceae / RRIUM CH: 13427	Madar	Eruakan	Shrub	C
25	*Capsicum annuum* L. / Solanaceae / RRIUM CH: 13472	Filfil-e-Ahmar	Milagai	Herb	C & C
26	*Cardiospermum corindum* L. / Sapindaceae / RRIUM CH: 13415	Qil Qil	Kattu Mudukathan	Climber	R
27	*Cardiospermum halicacabum* L. / Sapindaceae / RRIUM CH: 13483	Qil Qil	Mudakathan	Climber	C
28	*Carica papaya* L. / Caricaceae / RRIUM CH: 13614	Papita	Papaimaram	Tree	C & C
29	*Carissa carandas* L. / Apocynaceae / RRIUM CH: 13509	Karonda	Kilakai	Shrub	C
30	*Cascabela thevetia* (L.) Lippold / Apocynaceae/ RRIUM CH: 13440	Kaner	Manjal arali	Tree	C
31	*Cassia absus* L. / Caesalpiniaceae / RRIUM CH: 13623	Chaksu	Nilaavaram	Creeping Herb	R
32	*Cassia fistula* L. / Caesalpiniaceae / RRIUM CH: 13662	Amaltas	Sarakondrai	Tree	C
33	*Catharanthus roseus* (L.) G.Don / Apocynaceae / RRIUM CH: 13459	Sadabahar	Nithiyakalyani	Herb	C
34	*Catunaregam spinosa* (Thunb.) Tirveng. / Rubiaceae / RRIUM CH: 13466	Mayeenphal	Karai	Tree	C
35	*Ceiba pentandra* (L.) Gaertn. / Malvaceae / RRIUM CH: 13556	Sembhai	Elavampanchu	Tree	C
36	*Cicer arietinum* L. / Papilionaceae / RRIUM CH: 13488	Nakhud	Kondakadalai	Herb	C & C
37	*Cinnamomum tamala* (Buch.-Ham.) T.Nees &Eberm. / Lauraceae / RRIUM CH: 13597	Saleekha	Levangapathiri	Tree	R
38	*Citrus limon* (L.) Osbeck / Rutaceae / RRIUM CH: 13498	Leemu Kaghzi	Elumichai	Tree	C & C
39	*Citrus maxima* (Burm.) Osbeck / Rutaceae / RRIUM CH: 13536	Chakotra	Narathangai	Tree	C
40	*Citrus sinensis* (L.) Osbeck / Rutaceae / RRIUM CH: 13589	Thurang	Sathukudi	Tree	C
41	*Cleome gynandra* L. / Cleomaceae / RRIUM CH: 13430	Hulhul	Kattukadugu	Herb	C
42	*Cleome viscose* L. / Cleomaceae / RRIUM CH: 13625	Bantakalan	Naivalai	Herb	C
43	*Clitoria ternatea* L. / Papilionaceae / RRIUM CH: 13499	Mazryoon	Sangu poo	Climber	C
44	*Coccinia grandis* (L.) Voigt / Cucurbitaceae / RRIUM CH: 13631	Kanduri	Kovai	Climber	C
45	*Coffea arabica* L./ Rubiaceae/ RRIUM CH: 13529	Qahwa	Coffee	Shrub	C & C
46	*Coriandrum sativum* L. / Apiaceae / RRIUM	Kishneez	Kothamalli	Herb	C & C

	CH: 13487				
47	*Cuminum cyminum* L. / Apiaceae/ RRIUM CH: 13515	Zeera Safaid	Seeragam	Herb	C & C
48	*Curcuma longa* L. / Zingiberaceae / RRIUM CH: 13413	Zardchob	Manjal	Herb	C
49	*Cuscuta reflexa* Roxb. / Cuscutaceae / RRIUM CH: 13632	Kasoos	Ottuchedi	Parasitic Climber	C
50	*Datura metel* L. / Solanaceae / RRIUM CH: 13490	Datura Siyah	Oomathai/	Herb	C
51	*Euphorbia hirta* L. / Euphorbiaceae / RRIUM CH: 13610	Dudhi Khurd	Amman pachai	Tree	C
52	*Euphorbia royleana* Boiss. / Euphorbiaceae / RRIUM CH: 13456	Thuuhar	Chaturakalli	Shrub	R
53	*Gmelina arborea* Roxb. / Verbenaceae / RRIUM CH: 13609	Badhara	Kumizham	Tree	C
54	*Gossypium herbaceum* L. / Malvaceae / RRIUM CH: 13412	Pambadana	Paruthi	Shrub	C & C
55	*Haldina cordifolia* (Roxb.) Ridsdale / Rubiaceae / RRIUM CH: 13645	Kadamba	Manjalkadambu	Tree	S
56	*Helianthus annuus* L. / Asteraceae / RRIUM CH: 13493	Suraj Mukhi	Suriyakanthi	Shrub	C
57	*Hibiscus rosa-sinensis* L. / Malvaceae / RRIUM CH: 13494	Gurhal	Semparithi	Shrub	C
58	*Hygrophila auriculata* (Schumach.) Heine / Acanthaceae / RRIUM CH: 13508	Talmakhana	Neermulli	Herb	C
59	*Ipomoea nil* (L.) Roth. / Convolvulaceae / RRIUM CH: 13576	Kaladana	-	Climber	R
60	*Jatropha curcas* L. / Euphorbiaceae / RRIUM CH: 13644	Baghrenda	Kattuamanaku	Shrub	C
61	*Justicia adhatoda* L. / Acanthaceae / RRIUM CH: 13435	Arusa	Aduthoda	Shrub	S
62	*Lablab purpureus* (L.) Sweet / Papilinaceae / RRIUM CH: 13640	Lablab	Avarai	Climber	C
63	*Leucas aspera* (Willd.) Link / Lamiaceae / RRIUM CH: 13469	Thumba	Thumbai	Herb	C
64	*Limonia acidissima* L. / Rutaceae / RRIUM CH: 13512	Kaith	Vilam maram	Tree	S
65	*Macrotyloma uniflorum* (Lam.) Verdc. / Papilionaceae / RRIUM CH: 13422	Kulthi	Kollu	Herb	C&C
66	*Magnolia champaca* (L.) Baill. Ex Pierre / Magnoliaceae / RRIUM CH: 13572	Chamba	Sambaga	Tree	R
67	*Mallotus philippensis* (Lam.) Mull. Arg. / Euphorbiaceae / RRIUM CH: 13491	Kamila	Senthuram	Tree	R
68	*Mangifera indica* L./ Anacardiaceae / RRIUM CH: 13530	Aam	Mamara	Tree	C
69	*Manilkara zapota* (L.) P. Royen / Sapotaceae / RRIUM CH: 13485	Cheque	Sapota	Tree	C&C
70	*Marsdenia sylvestris* (Retz.) P.I.Forst. (*Gymnema sylvestre* (Retz.) R. Br.) / Asclepiadacea / RRIUM CH: 13526	Gurmar Buti	Sarkaraikolli	Climber	R
71	*Melia azedarach* L. / Meliaceae / RRIUM CH: 13628	Bakiyan	Malaivambu	Tree	S
72	*Mimusops elengi* L. / Sapotaceae / RRIUM CH: 13460	Mulsari	Migalam	Tree	R
73	*Moringa oleifera* Lam. / Moringaceae/ RRIUM CH: 13481	Sahajana	Murungai	Tree	C&C
74	*Morus alba* L. / Moraceae/ RRIUM CH: 13570	Tuut	Mulberry	Shrub	R
75	*Musa paradisiaca* L. / Musaceae / RRIUM CH: 13564	Mauz	Vazhai maram	Tree	C&C

76	*Nerium oleander* L. / Apocynaceae / RRIUM CH: 13486	Kaneer	Poo arali	Tree	C
77	*Ocimum tenuiflorum* L. / Lamiaceae / RRIUM CH: 13433	Raihan	Nalla Thulasi	Herb	C
78	*Pavonia odorata* Willd. / Malvaceae / RRIUM CH: 13448	Nathirabala	Peramutti	Herb	R
79	*Phoenix sylvestris* (L.) Roxb. / Arecaceace / RRIUM CH: 13532	Khajur	Eacham	Tree	R
80	*Phyllanthus amarus* Schumach. & Thonn. / Euphorbiaceae / RRIUM CH: 13470	Bhui Amla	Keezhanelli	Herb	C
81	*Physalis angulata* var. *angulata* / Solanaceae / RRIUM CH: 13565	Kaknaj	Sodukuthakali	Herb	C
82	*Piper betle* L. / Piperaceae / RRIUM CH: 13495	Paan	Vetrilai	Climber	C&C
83	*Piper nigrum* L. / Piperaceae / RRIUM CH: 13518	Filfil Siyah	Milagu	Climber	C&C
84	*Plumbago zeylanica* L. / Plumbaginaceae / RRIUM CH: 13468	Sheetraj Hindi	Kodiveli	Shrub	S
85	*Plumeria rubra* L. /Apocynaceae/ RRIUM CH: 13574	Gulchin	Kalimandharai	Tree	S
86	*Pongamia pinnata* (L.) Pierre / Papilionaceae / RRIUM CH: 13479	Karanj	Pungan	Tree	C
87	*Portulaca oleracea* L. / Portulacaceae / RRIUM CH: 13634	Khurfa	Parupukeerai	Herb	C&C
88	*Psidium guajava* L. / Myrtaceae / RRIUM CH: 13558	Amrood	Koiya	Tree	C&C
89	*Punica granatum* L. / Punicaceae / RRIUM CH: 13492	Anar	Madhulai	Shrub	C&C
90	*Rosa damascene* Mill. / Rosaceae / RRIUM CH: 13638	Gul-e-Surkh	Irosa	Herb	C&C
91	*Rotheca serrata* (L.) Steane & Mabb. / Verbenaceae / RRIUM CH: 13546	Bharangi	Siruteaku	Shrub	R
92	*Rubia cordifolia* L. / Rubiaceae/ RRIUM CH: 13552	Majeeth	Manjati	Shrub	R
93	*Ruta graveolens* L. / Rutaceae / RRIUM CH: 13583	Sudaab	Aruvatham	Herb	R
94	*Santalum album* L. / Santalaceae / RRIUM CH: 13618	Sandal safaid	Santhanam	Tree	R
95	*Senna auriculata* (L.) Roxb. / Caesalpiniaceae/ RRIUM CH: 13421	Tarwar	Aavaram	Shrub	C
96	*Senna occidentalis* (L.) Link / Caesalpiniaceae / RRIUM CH: 13461	Kasondi	Paiavarai	Herb	C
97	*Sesamum indicum* L. / Pedaliaceae/ RRIUM CH: 13458	Kunjad	Eallu	Herb	C&C
98	*Solanum americanum* Mill. / Solanaceae/ RRIUM CH: 13478	Mako	Manithakali	Herb	C
99	*Solanum virginianum* L. / Solanaceae / RRIUM CH: 13476	Katai Khurd	Kandankathiri	Herb	C
100	*Strychnos nux-vomica* L. / Logoniaceae/ RRIUM CH: 13441	Azaraqi	Yetti	Tree	R
101	*Strychnos potatorum* L. fil. / Logoniaceae/ RRIUM CH: 13438	Nirmali	Thetthamkottai	Tree	R
102	*Tamarindus indica* L. / Papilionaceae / RRIUM CH: 13439	Tamar Hindi	Puliyamaram	Tree	C
103	*Tectona grandis* Linn. f. / Verbenaceae / RRIUM CH: 13639	Sagwon	Theaku	Tree	C&C
104	*Tephrosia purpurea* (L.) Pers. / Papilionaceae / RRIUM CH: 13502	Sarphuka	Kolingi	Herb	C
105	*Terminalia chebula* Retz. / Combretaceae / RRIUM CH: 13620	Halela	Kadukai	Tree	C

106	*Tinospora cordifolia* (Willd.) Miers. / Menispermaceae / RRIUM CH: 13656	Gilo	Senthil kodi	Climber	R
107	*Toddalia asiatica* (L.) Lam. / Rutaceae / RRIUM CH: 13454	Jangali Kali Mirch	Milagarani	Stragglers	R
108	*Tribulus terrestris* L. / Zygophyllaceae/ RRIUM CH: 13429	Khaar-e-Khasak	Nerunjil	Creeping Herb	C
109	*Vitex negundo* L. / Verbenaceae / RRIUM CH: 13503	Sambhalu	Nochi	Shrub	C
110	*Wrightia laevis* Hook.f. / Apocynaceae / RRIUM CH: 13467	Inderjo Sheerin	Veppalai	Tree	C
111	*Zizyphus mauritiana* Lam. / Rhamnaceae / RRIUM CH: 13465	Ber	Elanthai	Tree	C

Note: C-Common, C&C: Common and Cultivation, R: Rare, S: Sporadic.

RESULT AND DISCUSSION

In the present study 262 medicinal plants species were collected from Kalvarayan and Shervorayans hills of Salem forest division Salem district, Tamil Nadu. Among these plants 111 Unani plants species (Table-1) having 51 families and 105 genera were selected. In this explored plants species 58 were common, 22 were rare, 8 were sporadic and 23 species were common/cultivated (Fig.2 &Table 1) which covers 52%, 20%, 7% and 21 % of the collected plants. The species like *Ananas comosus* (L.) Merr., *Brassica nigra* (L.) K.Koch, *Cajanus cajan* (L.) Millsp., *Capsicum annuum* L., *Carica papaya* L., *Cicer arietinum* L., *Citrus limon* (L.) Osbeck, *Coffea arabica* L., *Coriandrum sativum* L., *Cuminum cyminum* L., *Gossypium herbaceum* L., *Macrotyloma uniflorum* (Lam.) Verdc., *Manilkara zapota* (L.) P. Royen, *Moringa oleifera* Lam., *Musa paradisiaca* L., *Piper betle* L., *Piper nigrum* L., *Portulaca oleracea* L., *Psidium guajava* L., *Punica granatum* L., *Rosa damascene* Mill., *Sesamum indicum* L. and *Tectona grandis* Linn. f. is found in cultivation activities in some part of the study area. It revealed that that these cultivated species are evidence for cultivation of some valuable medicinal plants in the study areas. This refers to the favour of climate and soil types for cultivation of medicinal plants.

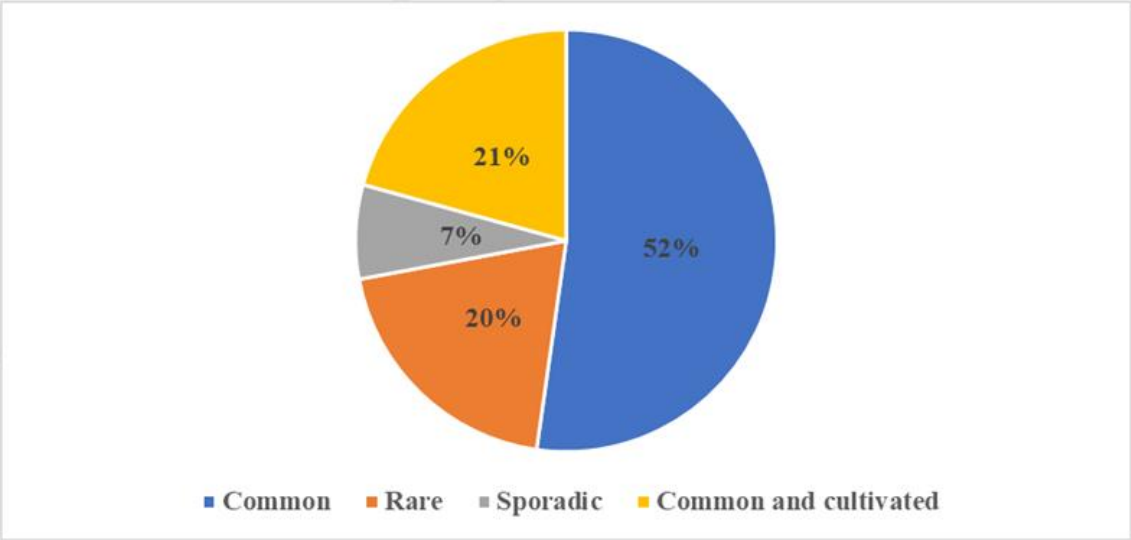

Figure 2: Analysis of Unani medicinal plants diversity status with respect to no. of species in the study area.

At the family level species richness were analysed to detect the diversity of the medicinal plants. Among this, maximum number of medicinal plants species was recorded from Papilionaceae (11) followed by the 7 species in Rutaceae, 6 species in Apocynaceae, 5 species in Euphorbiaceae, Malvaceae and Solanaceae, 4 species in

Caesalpiniaceae, Rubiaceae and Verbinaceae, 3 species in Acanthaceae and Amaranthaceae, 2 species in Anacardiaceae, Apiaceae, Asclepiadaceae, Asteraceae, Cleomaceae, Combretaceae, Lamiaceae, Logoniaceae, Mimosaceaea, Moraceae, Piperaceae, and Sapotaceae. One species in Alangiaceae, Arecaceae, Bormeliaceae, Brassicaceae, Caricaceae, Convolvulaceae, Crassulaciaceae, Cucurbitaceae, Cuscutaceae, Lauraceae, Magnoliaceae, Meliaceae, Menispermaceae, Moringaceae, Musaceae, Myrtaceae, Nyctaginaceae, Papavaraceae, Pedaliaceae, Plumbaginaceae, Poaceae, Portulacaceae, Punicaceae, Rhamnaceae, Rosaceae, Santalaceae, Zingiberaceae and Zygophyllaceae (Fig. 3 &Table 1).

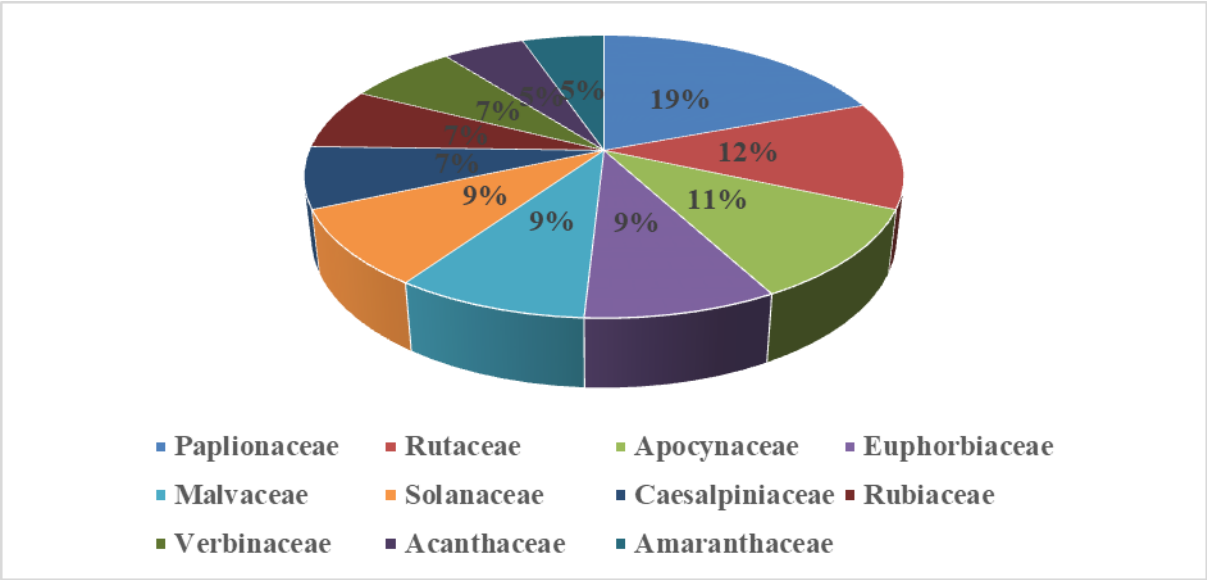

Figure 3: Analysis of Unani medicinal plants diversity status with respect to major family wise in the study area.

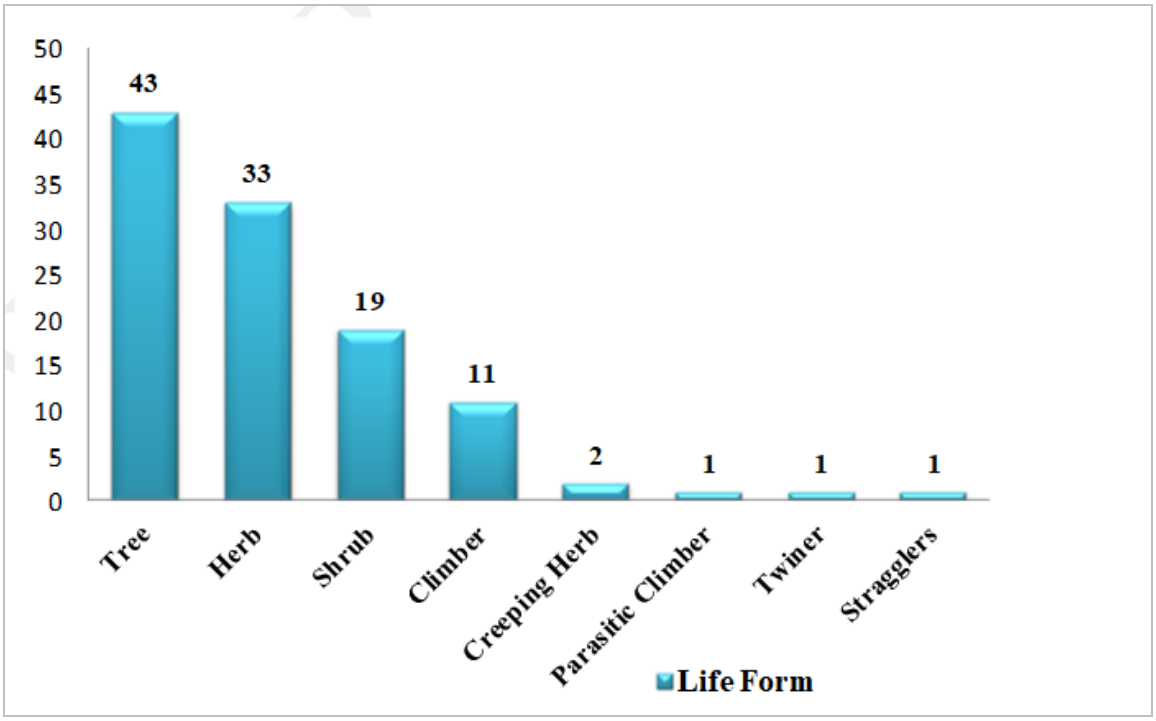

Figure 4: Analysis of Unani medicinal plants habit/life forms with respect to no. of species in the study area.

During the study on the basis of the life form in the study recorded 43 tree, 33 herbs, 19 shrubs, 11 climbers, 2 creeping herb, 1 parasitic climber, 1 twiner and 1 straggler species of the plants. (Fig. 4). In Unani system plants are the principal source of raw drugs for the preparation of the Unani medicine. The Unani medicinal plants are explored as single (Ilaj bil Mufrrad) and compound (Ilaj bil Murakkabat) drugs in the treatment of various ailments like arthritis, bars, boils, diarrhoea, dysentery, gastric ulcer, head ache, inflammation, jaundice, piles, sex related disorders, skin diseases, stomach disorders, urinary diseases and Women diseases etc. Medicinal plants are used comparatively frequently in healthcare procedures in developing nations. In addition to the traditional medical system, modern medicines based on natural products show promise in India. Hamilton claims that approximately 44% of India's flora is used medicinally (Hamilton 2008). With its vast natural vegetation, India is referred to as the "herbarium of the world" and is one of the twelve countries with the highest biodiversity in the world and home to four distinct "biodiversity hot spots". The medicinally used plants are falls under vulnerable, rare and sporadic category due to various external factors. These wild medicinal plants species which are available in the natural sources are recommended to the germplasm collection, to take up conservation and propagation activities seriously. Because due to various external factors many of the valuable plant species are under threat to became rare, endangered and some are on the verge of extinction. The demand for medicinal plants and their raw materials in India and around the world is growing annually, and the money made from growing these crops enhances farmer incomes and provides employment opportunities for people all year long. There is a pressing need to use press coverage, advertising, education, and scientific reports to popularize, raise awareness, and familiarize people with plant products as a preventative measure to preserve its population and the gene pool of these therapeutic plants for our coming generations. It can be concluded that these wild plant species should be conserved seriously and to be encouraged for large scale cultivation and to develop herbal gardens for medicinal plants in the suitable areas by adopting the modern agronomical techniques.

CONCLUSION

Medicinal plants have long been regarded as a vital source of medicine, particularly for the Traditional Medical System (AYUSH System). Over time, people have come to understand their role in treating diseases permanently and at a reasonable cost. The state of medicinal plants is extremely concerning, and as the above illustration shows, they may become extinct in f uture. The traditional Unani formulas and medicines used to treat a wide range of illnesses, including lifestyle diseases like diabetes, heart issues, obesity, hypertension, and bronchial asthma, will be permanently lost if these crude drugs are not sustainably available. In order to preserve the plant's wealth, the government and different NGOs must step up and take on this crucial task. In order to conserve rare plants, efforts should also be made to find them in all parts of the nation. Because these priceless plants will soon be in danger, precautions must be taken to preserve their wealth. We can draw the conclusion that both protected and unprotected forests are essential for the preservation of plant diversity. Additionally, the national parks and sanctuaries will pave a way for the in-situ preservation of therapeutic plants.

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