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Research Article

Checklist of geophytes in Tirunelveli corporation area, Tamil Nadu, India

Saravana Ganthi A.[1] and Subramonian K.[2]
[1]Department of Botany, Rani Anna Govt. College for Women, Tirunelveli, India.
[2]Department of Botany, The MDT Hindu College, Tirunelveli, India.

Abstract: Geophytes exhibit great diversity in their growth, morphology and developmental biology, and physiological response to environmental factors. Taxonomic studies and classification of geophytes, of either known or newly introduced species, are important. The studies on ornamental geophytes are greatly expanded. Tirunelveli district has a diverse geophytic flora and these resources not fully explored. Hence present study aimed to document the geophytes in the Tirunelveli Corporation area, Tamil Nadu. During the course of the present study, field trips were carried out to identify, document, and characterize the geophytes grown in the study area. Totally 76 species of geophytes were recorded in the study area. The species belonged to 29 families and 58 genera. Totally 44 ornamental geophytes were grown in home gardens of the study area. Geophytes reported with various growth forms. Of the 76 geophytes, 6 climbers, 1 shrub, 4 trees, and the remaining 65 are herbs. *Alocasia sanderiana* reported as critically endangered species in the IUCN Red List of Threatened Species. 20 exotic geophytes were recorded in the field study. The present study accounting for the diversity of geophytes in Tirunelveli corporation area and the results may serve to determine conservation strategies for geophytes in the study area.

Keywords: Endemics; Exotics; Geophytes; Medicinal plants; Tirunelveli Corporation

Introduction

Geophytes were defined by Raunkiaer (1934) as plants with an underground perennation organ and leaves that die back annually. Most of geophytes are occur within the monocotyledon orders and is rarely predominant in eudicot families. Order Asparagales and Liliales of APG system (APG III, 2009) embrace the majority of important geophytes (Dahlgren *et al*., 1985). True bulbs are absent from eudicot families with the exception of Oxalidaceae (Oberlander *et al*., 2009). Many scientific papers and trade articles as well as excellent reviews have been published on geophytes (De Hertogh, 1996; Hanks, 2002). It is well known the geophytes exhibits great diversity in their morphology, growth, development cycles and physiological responses to environmental factors (De Hertogh and Le Nard, 1993).

The ornamental geophytes significantly contribute to the global flower industry (Benschop *et al*., 2010). Ornamental geophytes have been admired by many people and are frequently mentioned in the ancient history and mythology (Bryan, 1989 & 2002). Much historical evidence suggests that many geophytes are used in food preparation and traditional system of medicines. By the late, 1800s the number of geophytes had begun to decline as result of ranching and farming disrupted the long standing indigenous relationships with subterranean plants. During twentieth century, a variety of factors lad to further losses in bulb and tuber population: destruction of habitat for housing, agriculture and harvesting for horticulture trade. Many geophytes listed as rare, threatened and endangered plant taxa (Anderson, 2005).

***Corresponding Author:**
Saravana Ganthi A.,
E-mail: saran_gan@rediffmail.com

Many studies has been done on the plants used for medicinal purposes in Tirunelveli District, but study on geophytes still lacking in particular. Hence, the present study was carried out to document the geophytes in Tirunelveli Corporation area, Tamil Nadu, India.

Materials and Methods

Study area

The Tirunelveli Municipal Corporation is located between Lat: 8° 43' 30.65" N; Lon: 77° 41' 4.27" E. with an area of 108.65' sq.kms and comprising of Tirunelveli Municipality, Palayamkottai Municipality, Melapalayam Municipality along with 15th villages panchayats and one Town Panchayat.

During the course of present study, field trips were carried out in the area during April 2019 to February 2020. A primary data about the geophytes were collected from public parks, college and school campus, District Science Centre campus, various Government office campuses, temple campus and home gardens located in municipality region of Tirunelveli Corporation.

All the relevant information of each geophytes was recorded in an index card. The nomenclature of the plants was followed based on the website: The Plant List (Version 1.1, 2013). The plants specimens collected were processed and housed at the laboratory of Botany, Rani Anna Government Arts College for Women, Gandhi Nagar, and identification of plants was done perusing relevant literature on Ornamental plants (Sabina, 2009), Ornamental plants and Garden design in tropics and sub-tropics (Bose *et al.*, 2015), Flora of Presidency of Madras (Gamble, 1915-1936) and with eflora websites.

Results and Discussion

A total of diverse 76 geophytic species were reported in the study which were tabulated. (Table :1)

The species belong to 29 families and 58 genera. Out of them majority (58% of the species) were monocots, and family Asparagaceae is dominant with 13 species. The largest four families were the Asparagaceae (13 species), Araceae (10), Amaryllidaceae (9), and Poaceae (9). The largest genus was *Sansevieria* with 4 species. 18 families are represented by one genus and 44 genera are represented by one species. 36 rhizomatous, 14 bulbous and 18 tuberous plants were recorded in the study area (Table 1). In *Ademium obesum* the storage organ is a caudex and in *Episcia cupreata* the storage organ is a stolon. The geophytes reported with various growth forms. Of the 76 geophytes, 6 climbers, 1 shrub, 4 trees and remaining 65 are herbs (Fig. 1). Each of these growth forms has functional significance. Four aquatic geophytes were reported. Six rhizomatous grasses also studied in the study area. Figure 2. illustrates the economic importance of the reported geophytes.

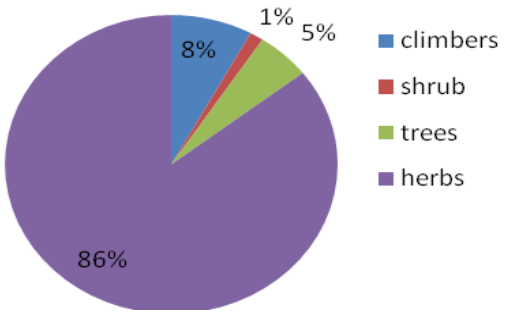

Figure 1. Habitwise Distribution

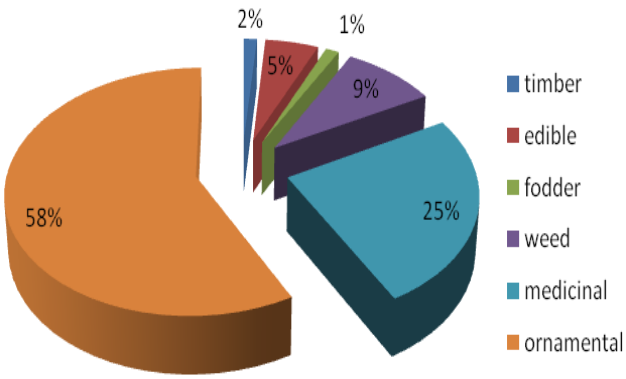

Figure 2. Economic importance of geotypes

Table 1. Checklist of geophytes reported in Tirunelveli.

S. No.	Botanical name	Family	Habit	Underground part	Uses
1.	*Acorus calamus* L.	Acoraceae	Herb	Rhizome	Medicinal
2.	*Ademium obesum* (Forssk.) Roem. & Schult.	Apocynaceae	Herb	Caudex	Ornamental
3.	*Alocasia augustiana* L. Linder & Rodigas	Araceae	Herb	Corm	Ornamental
4.	*Alocasia micholitziana* Sander	Araceae	Herb	Corm	Ornamental
5.	*Alocasia sanderiana W. Bull*	Araceae	Herb	Corm	Ornamental
6.	*Alpinia calcarata* (Haw.) Roscoe	Zingiberaceae	Herb	Rhizome	Medicinal
7.	*Alpinia purpurata* (Vieill.) K.Schum.	Zingiberaceae	Herb	Rhizome	Ornamental
8.	*Amaryllis belladonna* L.	Amaryllidaceae	Herb	Bulb	Ornamental
9.	*Amorphophallus paeoniifolius* (Dennst.) Nicolson	Araceae	Herb	corm	Ornamental
10.	*Anthurium andraeanum* Linden ex André	Araceae	Herb	Rhizome	Ornamental
11.	*Aponogeton natans* (L.) Engl. & K.Krause,	Aponogetaceae	Herb	Bulb	Medicinal
12.	*Asparagus densiflorus* (Kunth) Jessop	Asparagaceae	Climber	Tuberous root	Ornamental
13.	*Asparagus racemosus* Willd.	Asparagaceae	Climber	Tuberous root	Medicinal
14.	*Asparagus setaceus* (Kunth) Jessop	Asparagaceae	Climber	Tuberous root	Ornamental
15.	*Bambusa vulgaris* Schrad.	Poaceae	Tree	Rhizome	Timber
16.	*Begonia rex* Putz.	Begoniaceae	Herb	Tuberous stem	Ornamental
17.	*Caladium andreanum Bogner*	Araceae	Herb	Tuberous stem	Ornamental
18.	*Caladium bicolor* (Aiton) Vent.	Araceae	Herb	Tuberous stem	Ornamental
19.	*Caladium macrotites* Schott	Araceae	Herb	Tuberous stem	Ornamental
20.	*Canna edulis* Ker Gawl.	Cannaceae	Herb	Rhizome	Ornamental
21.	*Canna indica* L.	Cannaceae	Herb	Rhizome	Ornamental
22.	*Chlorophytum comosum* (Thunb.) Jacques	Asparagaceae	Herb	Tuberous root	ornamental
23.	*Chlorophytum tuberosum* (Roxb.) Baker	Asparagaceae	Herb	Tuberous root	Medicinal
24.	*Coccinea indica* Wight & Arn.,	Cucurbitaceae	Climber	Tuberous root	Medicinal
25.	*Colocasia esculanta* (CE) Linn.	Araceae	Herb	Corm	Edible
26.	*Corallocarpus epigaeus* (Rottler) Hook.f.	Cucurbitaceae	Climber	Tuberous root	Medicinal
27.	*Crinum asiaticum* L.	Amaryllidaceae	Herb	Bulb	Ornamental
28.	*Crinum latifolium L.*	Amaryllidaceae	Herb	Bulb	Ornamental
29.	*Cryptocoryne spiralis* (Retz.) Fisch. ex Wydler,	Araceae	Herb	Rhizome	Medicinal
30.	*Curculigo orchioides* Gaertn.	Hypoxidaceae	Herb	Tuberous root	Medicinal
31.	*Cymbopogon citratus* (DC.) Stapf	Poaceae	Herb	Rhizome	Medicinal
32.	*Cymbopogon flexuosus* (Nees ex Steud.) W.Watson	Poaceae	Herb	Rhizome	Weed
33.	*Cynodon dactylon* (L.) Pers.	Poaceae	Herb	Rhizome	Medicinal
34.	*Cyperus alternifolius* L.	Cyperaceae	Herb	Rhizome	Ornamental
35.	*Cyperus rotundus* L.	Cyperaceae	Herb	Rhizome	Medicinal
36.	*Dhalia pinnata* Cav.	Asteraceae	Herb	Tuberous root	Ornamental
37.	*Drimia indica* (Roxb.) Jessop	Asparagaceae	Herb	Bulb	Medicinal
38.	*Ensete superbum* (Roxb.) Cheesman	Musaceae	Tree	Rhizome	Ornamental
39.	*Episcia cupreata* (Hook.) Hanst.	Gesneriaceae	Herb	Stolon	Ornamental
40.	*Fimbristylis ferruginea* (L.) Vahl.	Poaceae	Herb	Rhizome	Weed
41.	*Gloriosa superba* L.	Colchicaceae	Climber	Tuberous root	Medicinal
42.	*Heliconia bihai* (L.) L.	Heliconiaceae	Herb	Rhizome	Ornamental
43.	*Heliconia psittacorum* L.f.	Heliconiaceae	Herb	Rhizome	Ornamental
44.	*Hippeastrum puniceum* (Lam.) Voss	Amaryllidaceae	Herb	Bulb	Ornamental

45.	*Hymenocallis littoralis* (Jacq.) Salisb.	Amaryllidaceae	Herb	Bulb	Ornamental
46.	*Imperata cylindrica* (L.) Raeusch.	Poaceae	Herb	Rhizome	Weed
47.	*Ipomoea batatas* (L.) Lam.	Convolvulaceae	Herb	Tuberous root	Edible
48.	*Kaempferia galanga* L.	Zingiberaceae	Herb	Rhizome	Medicinal
49.	*Kyllinga brevifolia* Rottb.	Cyperaceae	Herb	Rhizome	Weed
50.	*Ledebouria socialis* (Baker) Jessop	Asparagaceae	Herb	Bulb	Ornamental
51.	*Oxalis corniculata* L.	Oxalidaceae	Herb	Rhizome	Medicinal
52.	*Manicot exculenta* (A.Braun) H.Scholz	Euphorbiaceae	Shrub	Tuberous root	Edible
53.	*Maranta arundinacea* L.	Marantaceae	Herb	Rhizome	Medicinal
54.	*Megathyrsus maximus* (Jacq.) B.K.Simon & Jacobs.	Poaceae	Herb	Rhizome	Fodder
55.	*Mirabilis jalapa L.*	Nyctaginaceae	Herb	Tuberous root	Medicinal
56.	*Monochoria vaginalis* (Burm.f.) Presl.	Pontederiaceae	Herb	Tuberous root	Weed
57.	*Musa paradisiacal L.*	Musaceae	Tree	Rhizome	Fruit edible
58.	*Nelumbo nucifera* Gaertn.	Nelumbonaceae	Herb	Rhizome	Ornamental
59.	*Nymphaea alba* L.	Nymphaeaceae	Herb	Rhizome	Ornamental
60.	*Nymphaea rubra* Roxb. ex Andrews	Nymphaeaceae	Herb	Rhizome	Ornamental
61.	*Panicum repens* L.	Poaceae	Herb	Rhizome	Weed
62.	*Paspalum notatum* Flüggé	Poaceae	Herb	Rhizome	Weed
63.	*Polianthes tuberosa* L.	Asparagaceae	Herb	Bulb	Ornamental
64.	*Proiphys amboinensis* (L.) Herb.	Amaryllidaceae	Herb	Bulb	Ornamental
65.	*Ravenala* madagascariensis Sonn.	Strelitziaceae	Tree	Rhizome	Ornamental
66.	*Ruellia tuberosa* L.	Acanthaceae	Herb	Tuberous root	Ornamental
67.	*Sansevieria cylindrica* Bojer ex Hook.	Asparagaceae	Herb	Rhizome	Ornamental
68.	*Sansevieria roxburghiana* Schult. & Schult. f.	Asparagaceae	Herb	Rhizome	Ornamental
69.	*Sansevieria trifasciata hahnii Hort.*	Asparagaceae	Herb	Rhizome	Ornamental
70.	*Sansevieria trifasciata* Prain	Asparagaceae	Herb	Rhizome	Ornamental
71.	*Scadoxus multiflorus* Martyn) Raf.	Amaryllidaceae	Herb	Bulb	Ornamental
72.	*Tradescantia spathacea* Sw.	Commelinaceae	Herb	Rhizome	Ornamental
73.	*Urginea indica* (Roxb.) Kunth	Asparagaceae	Herb	Bulb	Medicinal
74.	*Zephyranthes candida* (Lindl.) Herb.	Amaryllidaceae	Herb	Bulb	Ornamental
75.	*Zephyranthes rosea* Lindl.	Amaryllidaceae	Herb	Bulb	Ornamental
76.	*Zingiber zerumbet* (L.) Roscoe ex Sm.	Zingiberaceae	Herb	Rhizome	Ornamental

Table 2. Geophytes with medicinal property and active constituents

S. No.	Botanical name	Active constituents	Uses	References
1.	*Acorus calamus*	Asarone, benzen, trans-β-Ocimene, Isocalamendiol, Methyleugenol, 3-Carene ß-asarone and α-Pinene	Antimicrobial, antispasmodic, anthelmintic and carminative features; memory impairment and epilepsy	Atalar and Türkan (2018)
2.	*Alpinia calcarata*	1,8-cineole a-terpineol, b-pinene, terpinen-4-ol and a-pinene	Stomach disorders, rheumatism, tuberculosis, diarrhea, ringworm, vomiting and skin diseases	Rana *et al.*, (2010)
3.	*Aponogeton natans*	glycosides, phytol, sitosterol, camp-esterol, stigmasterol, gallic acid, hexa-decanoic acid, cycloartenol, tetradeca-noic acid, ethyl ester, 9-desmethyl-herbarine, 7-desmethyls-corpinone, 7-desmethyl-6- methylbostrycoidin, fusarubin	Antioxidant, antitumor, antiinflammatory, hepatoprptective, antimicrobial, antidiabetic, thrombolytic, cytotoxic, wound healing	Chowdhury *et al.*, (2019)
4.	*Asparagus*	2- Furancarboxaldehyde, 1,2- Dithio-	Anti ageing, increase longevity,	Janani and

	racemosus	lane-3-carboxylic acid [synonyms: Tetranorlipoic acid], 1,6-Anhydro-β-d-talopyranase, Tetradecanic acid, n-Hexadecanic acid, Oleic acid,	impart immunity, improve, neuroprotective and to cure depression	Singaravadivel (2014)
5.	*Chlorophytum tuberosum*	Bisisoflavonoid glycoside, proteins, reducing and non-reducing sugars, fats, saponins, tannins, alkaloids	Aphrodisiac, antimicrobial, antioxidant, hepatoprotective, galactogogue, antidiabetic, adaptogenic activities	Bhat *et al.*, (2018)
6.	*Coccinia indica*	Resin, Alkaloids, Starch, Fatty Acids, Carbonic acid, Triterpenoid, Saponin Coccinoside, Flavonoid Glycoside, Lupeol, β-amyrin, β- sitosterol, Taraxerol	Remove pain in joints, aphthous ulcers, wheezing, and phlegm, cure diabetes, and intermittent glycosuria, Skin diseases, skin lesions	Mathews and Sunny (2019)
7.	*Corallocarpus epigaeus*	*n*-hexadecanoic acid and octadecanoic acid. corallocarpscalaride, a pyridine carboxylic ester, designated as corallocarpeonyl ester	Antifungal, antibacterial, anticancer antidiabetic and antioxidant	Ishnava and Konar (2020)
8.	*Cryptocoryne spiralis*	Cyclo hydrocarbon Bicyclo (2.2.1) heptanes, 2-methyl-3- methylene-2-(4-methyl-3-pentenyl)-(1S-exo), 3-Butoxy-1,1,1,7,7,7- hexamethyl-3,5,5-tris (trimethylsiloxy) tetrasiloxane, cyclohexasiloxane, dodecamethyl,	Diarrhoea, fever and jaundice, burns and boils	Wadkar *et al.*, (2017)
9.	*Curculigo orchioides*	Hexadecane,5-butyl, Benzoic acid, 4-ethoxy-,ethyl ester, Ethyl iso allocho-late and Dodecane 2,6,11-trimethy	Oxytocic activity, antioxidant, hepatoprotective, immunomodulatory	Daffodil *et al.*, (2012)
10.	*Cymbopogon citratus*	citral, neral, β-myrcene, geraniol 1,3,4-trimethyl -3- cyclohexene-1-carboxal-dehyde, and citronellol. Geranyl acetate, Bicyclo [3.1.1] heptane-2-Carboxaldehyde -6,6-dimethyl	Cytoprotective, hypocholesterolemic, antioxidant, anti-inflammatory antimalarial, antimutagenic, antiprotazoan	Abdulelah *et al.,* (2019)
11.	*Cynodon dactylon*	Hexadecanoic acid, ethyl ester, Linolenic acid, ethy ester and d-Mannose	Calculus, cancer, carbuncles, cough, hypertension, snakebites, stones, gout and rheumatic affections	Shabi *et al.*, (2010)
12.	*Cyperus rotundus*	α-Cyperone, myrtenol, caryophyllene oxide and β-pinene	Anti-candida, anti-inflamma-tory, antidiabetic, antidiarrho-eal, cytoprotective, antimuta-genic, antimicrobial, antibacte-rial, antioxidant, cytotoxic and apoptotic,	Lawal and Oyedeji (2009)
13.	*Drimia indica*	alkylresorcinols, bufadienolides, phytosterols, and flavonoids	Respiratory disorders, skin diseases, dysmenorrhea, and intestinal worms.	Aswal *et al.*, (2019)
14.	*Gloriosa superba*	Hydroxymethylfurfural, Benzoicacid, 2-hydroxy-6-methoxy, Benzene,1,4-bis (1,1-dimethylethyl), n-Hexadeconic-acid, Oleic acid Octadecanoic acid, Octadecanoic acid Stigmasterol, Colchiceine	Analgesic, anti-inflammatory potential, antimicrobial, larvicidal potential, antipoxviral, antithrombotic, antitumor	Anitha (2018)
15.	*Kaempferia galanga*	e α-pinene, camphene, carvone, benzene, eucalyptol, borneol, methyl cinnamate, pentadecane and ethyl-p-	Scariasis, bacterial infections, tumor and applied externally for abdominal pain in women and	Tewtrakul *et al.,* (2005)

		methoxycinnamat	used topically for treatment of rheumatism	
16.	*Oxalis corniculata*	9,12,15-Octadecatrienoic acid (Z,Z,Z) and n-Hexadecanoic acid. Phenol,2-Methyl 1-5-, E-10-Pentadecenol	Hypoglycemic, antihypertensive, chronotropic effect, uterine relaxant, antipsychotic, CNS-stimulant, inotropic effect, smooth muscle relaxant.	Aruna *et al.*, (2014)
17.	*Maranta arundinacea*	Cyclohexanone, 4-(3,4-Dimethoxy-phenyl)-butan-1-ol, 3-Methylene-1-oxa-spiro[3,6]decane, Cyclohexyl-methyl-diethyl-methoxy-silane, Tetradecane	Antioxidant, anticancer, antiinflammatory, antimutagenic	Nishaa *et al.*, (2015)
18.	*Mirabilis jalapa*	oleic acid, beta-sitosterol, isosteviol, 4-hydroxyquinoline, lukianol	antioxidant and antibacterial, antiproliferative, cardioprective toxic	Hajji *et al.*, (2010)
19.	*Urginea indica*	Sitosterol, Stigmasterol, Campeterol, Octacosanoic acid, Scillarenin, Bufadienolides	Acetylcholinergic, Anticarcinomic, Anticystic, Antiedemic, Cardiac, Antiviral	Kameshwari (2013)

Flowering phenology

Some geophytes in the study area are deciduous. Among the deciduous species, both synanthous and hysteranthous species are represented, the former leafing and flowering at the same time, while in the latter the flowers are produced in the dry season prior to or after the leaves (Dafni *et al*., 1981). Environmental condition such as temperature, humidity and light are influencing the flowering in bulbous plants (Corbsier and Coupland, 2003; Horvath, 2009). The wild geophytes such as *Gloriosa superba*, *Chlorophytum tuberosum, Cryptocoryne spiralis, Curculigo orchioides, Oxalis corniculata* and *Urginea indica* are flower towards the end of the rainy season, continuing until early summer. Summer flowering species *Asparagus racemosus* starts flowering after first significant rains in the summer. Species such as *Coccinea indica, Ruellia tuberosa* are continuous flowering throughout the year, if enough water and nutrients available. *Nymphaea alba, Nelumbo nucifera* and *Nymphaea rubra* starts flowering after the summer season and before the rainy months (August – September).

The flowering season of aquatic geophytes *Monochoria vaginalis* and *Aponogeton natans* are January – March. Many ephemeral geophytic sedges and grasses are starts flower towards end of rainy season. The *Amaryllis* or *Hippeastrum* produces large and trumpet-shaped flowers. The flowers are produced in clusters of four to six flowers per stem. The flowers are produced in the leafless, hollow stems can grow to be two to three feet tall during summer (May – June). *Hippeastrum, Caladium, Begonia, Canna* and *Dahlia* is blossoming in summer.

Endemics

Alocasia sanderiana reported as critically endangered species in the IUCN Red List of Threatened Species. *Amorphophallus paeoniifolius, Chlorophytum tuberosum, Drimia indica, Cyperus rotundus, Fimbristylis ferruginea, Gloriosa superba, Kyllinga brevifolia*, *Adenium obesum, Nymphaea alba* and *Panicum repens* are classified as "Least concern" plant in the IUCN Red List of threatened species. *Acorus calamus* is reported as vulnerable medicinal plant by ENVIS – FRLHT, Bengaluru. *Corallocarpus epigaeus, Crinum asiaticum, Cryptocoryne spiralis* and *Sansevieria roxburghiana* are endemic to peninsular India and Sri Lanka (Daniel and Umamaheswari, 2001).

Exotics

Many ornamental geophytes are exotic plants. In the present study the ornamental plants such as *Ademium obesum*, *Dhalia pinnata, Heliconia psittacorum, Cyperus alternifolius, Anthurium andraeanum, Canna indica, Ravenala madagascariensis, Caladium bicolor, Hymenocallis littoralis, Zephyranthes candida, Z. rosea, Zingiber zerumbet* and *Tradescantia spathacea* are the common exotic plants (ENVIS, 2009; Narasimhan *et al*., 2009). These ornamental plants introduced to India to provide as new look to the botanical gardens with their attractive colours. Khuroo *et al*., (2007) revealed that horticulture is the main pathway which invites and accumulates exotics in India. *Ipomoea batatas, Manicot exculenta, Maranta arundinacea, Oxalis corniculata, Mirabilis jalapa* and *Cymbopogon citratus* are some wild exotic geophytes (ENVIS, 2009).

Economic importance

The tuberous root of the *Ipomoea batatas, Manihot exculenta* and corm of *Colocasia esculanta* are edible. *Megathyrsus maximus* is cultivated grass for fodder. The fruit is edible in *Musa paradisiaca.* 19 medicinal geophytes also recorded in the study area (Table 2). The underground parts of *Acorus calamus, Alpinia calcarata, Chlorophytum tuberosum, Cymbopogon citratus, Cyperus rotundus, Drimia indica* and *Kaempferia galanga* consists of volatile oils. The volatile oil (lemon grass oil) extracted from *Cymbopogon citratus* has large international market potential (Boukhatem *et al*., 2014). In this study, a total of 44 ornamental geophytes were grown in home gardens.

The global demands for ornamental geophytes are continuously increasing, so innovative production technologies and marketing strategies are need of the hour. The use of colourful flowered and attractive foliage containing wild geophytes as ornamental plant can play a significant role in the conservation of biodiversity.

Similar to the present study, several studies have documented diversity of geophytes. Proches *et al.,* (2006) reported 2100 species of geophytes in 20 families from Cape Region of southern Africa, of which 84% are endemic. Mwafongo *et al.,* (2010) recorded ethnobotanical survey of geophytes used in 15 selected districts of Malawi. 49 geophytes were documented as useful for food (24%), medicine (58%) and other purposes (18%). Gaikwad *et al.,* (2015) recorded 186 geophytes in the northern Western Ghats. As stated in these reports, the present study also showed dominance of herbs. Firat (2015) recorded the distribution of geophytes in East Anatolia, Turkey and reported that geophytes are distributed in 44 genera and 313 taxa of 9 families, of which Amaryllidaceae, Asparagaceae, Colchicaceae were the dominant families. Similarly, the present field study distributed in 13 families, of which Asparagaceae, Araceae, Amaryllidaceae and Poaceae are the most dominant families.

Conclusion

This checklist of Geophytes documented in Tirunelveli district reported 76 diverse geophytic flora which were hitherto not reported. The present field study accounts indigenous geophytes species which has to be studied for medicinal value, commercialization as ornamentals which indeed promote export potential of our country.

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