Floristic Diversity Assessment of Home Garden in Palayamkottai Region of Tirunelveli District, Tamil Nadu: a Means of Sustainable Biodiversity Conservation

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ABSTRACT

Home garden is an integrated system which consists of different plants in its small area that produces a variety of foods and agricultural products including vegetables, fruits, medicinal plants, ornamentals etc. All home gardeners were individually interviewed about home garden management and plant utilization, among other information. The biological and cultural significance of agro biodiversity in home gardens are highlighted with the future obligation and prospect in home gardens to improve our natural resource and avoid the pollution with free air circulation. The main objective of this study was to assess the status, composition and diversity of plants in an urban home gardens with the help of socio economic factors of households. The study was carried out in Palayamkottai region of Tirunelveli district of Tamil Nadu, India. A total of 182 species were observed, which belonging to 159 genera and 71 families. Most of plants were dicot with 53 families and 150 species, whereas monocot with 15 families and 29 species and third one gymnosperm were presented with 2 families and 2 species and a single species of Pteridophyte also were documented. Fabaceae, Apocynaceae and Solanaceae were the most dominant families and 2 species and a single species of Pteridophyte also were documented. Fabaceae, Apocynaceae and Solanaceae were the most dominant among other information. The biological and cultural significance of agro biodiversity in home gardens are highlighted with the future obligation and prospect in home gardens to improve our natural resource and avoid the pollution with free air circulation. The main objective of this study was to assess the status, composition and diversity of plants in an urban home gardens with the help of socio economic factors of households. The study was carried out in Palayamkottai region of Tirunelveli district of Tamil Nadu, India. A total of 182 species were observed, which belonging to 159 genera and 71 families. Most of plants were dicot with 53 families and 150 species, whereas monocot with 15 families and 29 species and third one gymnosperm were presented with 2 families and 2 species and a single species of Pteridophyte also were documented. Fabaceae, Apocynaceae and Solanaceae were the most dominant families and 2 species and a single species of Pteridophyte also were documented. Fabaceae, Apocynaceae and Solanaceae were the most dominant

KEYWORDS: Home garden, biodiversity, agricultural, medicinal plant and ornamental

INTRODUCTION

Home gardens are traditional agro forestry systems characterized by the intricacy of their structure with lot of functions. Home gardens can be defined as 'land use system involving deliberate management of multipurpose biological varieties such as trees, herbs and shrubs in intimate association with annual and perennial agricultural crops and variable livestock within the compounds of individual houses. Home garden is an integrated system which comprises different things in its small area (the family house, a kitchen garden, a mixed garden etc). It produces a variety of foods, medicine and agricultural products. These products could be used both for home consumption and for incoming purpose. There are numerous types of home gardens were serving for several functions. Vegetable gardens were the cultivation of different kinds of vegetables and fruits. Herbal gardens can be grown in a small a spot as a window box. Growing of culinary herbs and spices gives the freshest ingredients. Different herbs are usually separated through the planting design and cultivated in pot. Rose gardens mainly for the cultivation of flowers for income or beautification and fourth one knot gardens had squares of flora or paving encased by dwarf. The knot garden looks to control nature to into beautiful patterns. Oriental gardens incorporates the use of water and paths, rocks and sculptured bushes and trees to create a peaceful and tranquil garden. Wild garden is a natural type of garden. Its natural style encourages the growth of natural plants and wild grasses. Home gardens are cultivation systems for both food and non-food production. Nevertheless, home gardens are mostly known for their food production function considered to be their basic function. The different denominations associated to home gardens are home food gardens, urban food gardens, domestic food gardens and kitchen garden. The different denominations associated to home gardens are home food gardens, urban food gardens, domestic food gardens and kitchen garden. The different denominations associated to home gardens are home food gardens, urban food gardens, domestic food gardens and kitchen garden. The different denominations associated to home gardens are home food gardens, urban food gardens, domestic food gardens and kitchen garden. The different denominations associated to home gardens are home food gardens, urban food gardens, domestic food gardens and kitchen garden. The different denominations associated to home gardens are home food gardens, urban food gardens, domestic food gardens and kitchen garden.
instance in Benin, where the reported plant used for non-food purposes compare to food ones it should be expected that home gardens are functionally diverse. Because food and health care are basic human needs, we predict that food and medicinal function will predominate other functions. Home garden species typically have multiple uses, meeting family needs for food, medicine, shade, religious rituals and ornamental purposes, and these species can be cultivated, tolerated, enhanced, and protected. Tolerance includes practices within human-made environments that are directly related to the conservation of useful plants that existed before the environments were transformed. Currently, the floristic composition of home gardens tends toward ornamental plants. Not all plants receive the same attention. The choice of certain species is associated with their use in community celebrations or as foods consumed in everyday life and the use of certain species to treat diseases for generations. A clear differentiation of the floristic composition between Mestizo and Maya home gardens. In Latin America, the purpose of home gardens is related to the edible, medicinal and aesthetic uses of a particular species, which are the most common factors due to the high frequency of these uses. In this study, the floristic composition of home gardens, the contribution of edible and medicinal species to household subsistence in Palayamkottai region of Tirunelveli District, Tamil Nadu, India.

**MATERIALS AND METHODS**

**Study Area**

The present study was conducted in Palayamkottai (8.7166° N and 77.7333° E) region of Tirunelveli district of Tamil Nadu, India. Temperature 28°C and humidity 78%. Palayamkottai was called as the Oxford of the southern Tamil Nadu. It is around 189.9 km² and the population about 4,73,637. Mainly four areas were considered in this study such as KTC Nagar, Perumalpuram, Santhi Nagar and NGO Colony (Fig.1).

**Information collection and analysis**

Field information from these home gardens was collected from January to August, 2018. In the first interview, each interviewee was asked the following questions to obtain a list of the most frequently mentioned home garden plants. For this analysis 182 species were considered. The botanical material was identified with the support of college Herbarium for St. Xavier’s college of Palayamkottai and experts of taxonomy. Households were identified as sampling units for the survey.

**RESULT AND DISCUSSION**

A total of 182 plant species were collected from the Palayamkottai region of Tirunelveli District. In the Habitat, most of the home garden plants 32% (60 species) were trees, 21% (39 species) were shrubs, 33% (61 species) were herbs, 10% were (18 species) climbers and 4% (7 species) were twainers (Fig.2).

The 182 plant species (including a Gymnosperm and Pteridophyte) belonging to 159 genera and 71 families.
| S. No | Botanical Name | Vernacular Name | Family | Habit |
|-------|----------------|-----------------|--------|-------|
| 1.    | Andrographis paniculata (Burm.f.) Wall. ex Nees | Siriyanangai | Acanthaceae | Herb |
| 2.    | Barleria cristata L. | December poo | Acanthaceae | Herb |
| 3.    | Barleria prionitis L. | Sulli flower | Acanthaceae | Herb |
| 4.    | Crossandra infundibuliformis (L.) Nees | Kanakambaram | Acanthaceae | Herb |
| 5.    | Justicia adhatoda L. | Aadhathoda | Acanthaceae | Shrub |
| 6.    | Pseudoranthemum laxiflorum (A. Gray). F.T.Hubb.ex.L.H.Bailey | Nagamalli | Acanthaceae | Shrub |
| 7.    | Thunbergia grandiflora (Roxb. ex Rottl.) Roxb | ---------- | Acanthaceae | Climber |
| 8.    | Acorus calamus L. | Vasambu | Acoraceae | Herb |
| 9.    | Alternanthera sessilis (L.) R. Br. ex DC. | Ponnankanni keerai | Amaranthaceae | Herb |
| 10.   | Amaranthus dubius Mart.exThell | Thandu keerai | Amaranthaceae | Herb |
| 11.   | Amaranthus viridis L. | Kuppai keerai | Amaranthaceae | Herb |
| 12.   | Celosia argentea L. | Kozhi kondai | Amaranthaceae | Herb |
| 13.   | Gomphrena globosa L. | Vaada mali | Amaranthaceae | Herb |
| 14.   | Achyranthus bidentata Blume | Kankanbaram | Acanthaceae | Herb |
| 15.   | Justicia adhatoda L. | Aadhathoda | Acanthaceae | Shrub |
| 16.   | Pseudoranthemum laxiflorum (A. Gray). F.T.Hubb.ex.L.H.Bailey | Nagamalli | Acanthaceae | Shrub |
| 17.   | Thunbergia grandiflora (Roxb. ex Rottl.) Roxb | ---------- | Acanthaceae | Climber |
| 18.   | Acorus calamus L. | Vasambu | Acoraceae | Herb |
| 19.   | Alternanthera sessilis (L.) R. Br. ex DC. | Ponnankanni keerai | Amaranthaceae | Herb |
| 20.   | Amaranthus dubius Mart.exThell | Thandu keerai | Amaranthaceae | Herb |
| 21.   | Amaranthus viridis L. | Kuppai keerai | Amaranthaceae | Herb |
| 22.   | Celosia argentea L. | Kozhi kondai | Amaranthaceae | Herb |
| 23.   | Gomphrena globosa L. | Vaada mali | Amaranthaceae | Herb |
| 24.   | Achyranthus bidentata Blume | Kankanbaram | Acanthaceae | Herb |
| 25.   | Justicia adhatoda L. | Aadhathoda | Acanthaceae | Shrub |
| 26.   | Pseudoranthemum laxiflorum (A. Gray). F.T.Hubb.ex.L.H.Bailey | Nagamalli | Acanthaceae | Shrub |
| 27.   | Thunbergia grandiflora (Roxb. ex Rottl.) Roxb | ---------- | Acanthaceae | Climber |
| 28.   | Acorus calamus L. | Vasambu | Acoraceae | Herb |
| 29.   | Alternanthera sessilis (L.) R. Br. ex DC. | Ponnankanni keerai | Amaranthaceae | Herb |
| 30.   | Amaranthus dubius Mart.exThell | Thandu keerai | Amaranthaceae | Herb |
| 31.   | Amaranthus viridis L. | Kuppai keerai | Amaranthaceae | Herb |
| 32.   | Celosia argentea L. | Kozhi kondai | Amaranthaceae | Herb |
| 33.   | Gomphrena globosa L. | Vaada mali | Amaranthaceae | Herb |
| 34.   | Achyranthus bidentata Blume | Kankanbaram | Acanthaceae | Herb |
| 35.   | Justicia adhatoda L. | Aadhathoda | Acanthaceae | Shrub |
| 36.   | Pseudoranthemum laxiflorum (A. Gray). F.T.Hubb.ex.L.H.Bailey | Nagamalli | Acanthaceae | Shrub |
| 37.   | Thunbergia grandiflora (Roxb. ex Rottl.) Roxb | ---------- | Acanthaceae | Climber |
| 38.   | Acorus calamus L. | Vasambu | Acoraceae | Herb |
| 39.   | Alternanthera sessilis (L.) R. Br. ex DC. | Ponnankanni keerai | Amaranthaceae | Herb |
| 40.   | Amaranthus dubius Mart.exThell | Thandu keerai | Amaranthaceae | Herb |
| 41.   | Amaranthus viridis L. | Kuppai keerai | Amaranthaceae | Herb |
| 42.   | Celosia argentea L. | Kozhi kondai | Amaranthaceae | Herb |
| 43.   | Gomphrena globosa L. | Vaada mali | Amaranthaceae | Herb |
| No. | Species Name                      | Common Name             | Family          | Type    |
|-----|----------------------------------|-------------------------|-----------------|---------|
| 57. | Tecoma stans (L.) Juss. ex Kunth | Nakacenpakam            | Bignoniaceae    | Shrub   |
| 58. | Cordia sebestena L.              | Aechinaruvihli          | Boraginaceae    | Tree    |
| 59. | Brassica juncea (L.) Czern.      | Kadugu                  | Brassicaceae    | Herb    |
| 60. | Ananas cosmusos (L.) Merr.       | Amachi                  | Bromeliaceae    | Shrub   |
| 61. | Mammillaria baumii Boed.         |                         | Cactaceae       | Shrub   |
| 62. | Opuntia dillenii (Ker-Gawl.) Haw.| Sappathikalli           | Cactaceae       | Shrub   |
| 63. | Tamarindus indica L.             | Pulia maram             | Fabaceae        | Tree    |
| 64. | Phanera purpurea (L.) Benth.     | Nilattiruvatti          | Fabaceae        | Tree    |
| 65. | Carica papaya L.                 | Pappali                 | Caricaceae      | Tree    |
| 66. | Casuarina equisetifolia L.        | Savukku                 | Casuarinaceae   | Tree    |
| 67. | Saraca asoca (Roxb.) Willd.      | Asogamaram              | Caesalpinaceae  | Tree    |
| 68. | Senna alexandrina Mill.          | Alakalam                | Caesalpinaceae  | Tree    |
| 69. | Senna auriculata(L.) Roxb.       | Aavaram poo             | Caesalpinaceae  | Tree    |
| 70. | Combretum constrictum (Benth.)   | Maruthamaram            | Combretaceae    | Tree    |
| 71. | Combretum indicum (L.)DeFilipps   | Irangun mali            | Combretaceae    | Tree    |
| 72. | Tradescantia pallida (Rose) D.R.Hunt | Paccalalari             | Commelinaceae   | Herb    |
| 73. | Ipomoea quamoclit L.             | Mayir manikkan          | Convolvulaceae  | Shrub   |
| 74. | Chamaecostus cuspidiatus (Nees & Mart.) C.Specht & D.W.Stev. | Neyccarikamaram       | Costaceae       | Herb    |
| 75. | Costus woodii L.                 |                         | Costaceae       | Tree    |
| 76. | Costus igneus Nak                |                         | Costaceae       | Herb    |
| 77. | Citrullus lanatus (Thunb.) Matum. & Nakai | Dharpoosani         | Cucurbitaceae   | Climber |
| 78. | Cocinia grandis (L.) Voigt       |                         | Cucurbitaceae   | Climber |
| 79. | Curcums sativusL.                |                         | Cucurbitaceae   | Climber |
| 80. | Cucurbita maxima Duchesne        |                         | Cucurbitaceae   | Climber |
| 81. | Lagenaria sicaraita (Molina) Standl. | Suiraili               | Cucurbitaceae   | Climber |
| 82. | Luffa acutangula Mill.           |                         | Cucurbitaceae   | Climber |
| 83. | Momordica charantia L.           |                         | Cucurbitaceae   | Climber |
| 84. | Cupressus sempervirens L.        |                         | Cucurbitaceae   | Tree    |
| 85. | Gycas cirinalis L.               | Madanakama poo          | Cucurbitaceae   | Tree    |
| 86. | Gycas revolutaThunb.             |                         | Cucurbitaceae   | Tree    |
| 87. | Muntingia calabura L.            |                         | Cucurbitaceae   | Tree    |
| 88. | Euphorbia cyatophora Murray      |                         | Euphorbiaceae   | Herb    |
| 89. | Codiaeum variegatum (L.) Rumph. ex A.Juss | Aathuppoondu          | Euphorbiaceae   | Shrub   |
| 90. | Euphorbia hirta L.               | Amman pacharicy         | Euphorbiaceae   | Herb    |
| 91. | Euphorbia millii Des Moul.       | Kreedai kalli           | Euphorbiaceae   | Shrub   |
| 92. | Euphorbia tithymaloides L.       | Kanṇadi kalli           | Euphorbiaceae   | Shrub   |
| 93. | Euphorbia trigona Mill.          | Paal kalli              | Euphorbiaceae   | Herb    |
| 94. | Ricinus communis L.              | Amanakku                | Euphorbiaceae   | Shrub   |
| 95. | Arachis hypogaeaeL.              |                         | Fabaceae        | Herb    |
| 96. | Clitoria ternatea L.             |                         | Fabaceae        | Tree    |
| 97. | Gymopsis tetragonoloba (L.) Taub.|                         | Fabaceae        | Herb    |
| 98. | Leucaena leucocephala (Lam.)de Wit |                         | Fabaceae        | Tree    |
| 99. | Mimosa pudica L.                 |                         | Fabaceae        | Herb    |
| 100. | Pithecellobium dulce (Roxb.) Benth. | Kodukkapuli             | Fabaceae        | Tree    |
| 101. | Pongamia pinnata (L.) Pierre     |                         | Fabaceae        | Tree    |
| 102. | Sesbania grandiflora (L.) Pers.  |                         | Fabaceae        | Tree    |
| 103. | Sesbania sesban (Lsb.) Merr.     |                         | Fabaceae        | Tree    |
| 104. | Trigonellefoenum-graecum L.      |                         | Fabaceae        | Tree    |
| 105. | Vigna radiata (L.) R. Wilczek    |                         | Fabaceae        | Herb    |
| 106. | Vigna unguiculata (L) Walp.      |                         | Fabaceae        | Tree    |
| 107. | Bauhinia tomentosa L.            |                         | Fabaceae        | Tree    |
| 108. | Bauhinia variegata (L)Benth      |                         | Fabaceae        | Tree    |
| 109. | Coleus blumi Benth              |                         | Lamiaceae       | Herb    |
| 110. | Mentha spicata L.                |                         | Lamiaceae       | Herb    |
| 111. | Ocimum tenuiflorum L.            |                         | Lamiaceae       | Shrub   |
| 112. | Plectranthus amboinicus (Lour.) Spreng. | Karpooravalli elai     | Lamiaceae       | Herb    |
| 113. | Volckameria inermis L.           |                         | Lamiaceae       | Shrub   |
| 114. | Delonix regia (Boj. ex Hook.) Raf. | Vaagai                 | Leguminosae     | Tree    |
| 115. | Lawsonia inermis L.              |                         | Lythraceae      | Tree    |
| 116. | Punica granatum L.               |                         | Lythraceae      | Tree    |
| 117. | Michelia champaca (L.) Baill. ex Pierre | Shenbaga poo          | Magnoliaceae    | Tree    |
| No. | Species Name | Common Name | Family | Type |
|-----|--------------|-------------|--------|------|
| 118 | Abelmoschus esculentus (L.) Moench | Vendai | Malvaceae | Shrub |
| 119 | Ceiba pentandra (L.) Gaertn. | Ilavam panchu maram | Malvaceae | Tree |
| 120 | Guazuma ulmifolia Lam. | Thennmaram | Malvaceae | Tree |
| 121 | Hibiscus rosa-sinensis L. | Champaruthy | Malvaceae | Shrub |
| 122 | Thespesia populnea (L.) Sol. Ex Correa | Poovarasu | Malvaceae | Tree |
| 123 | Azadirachta indica A. Juss. | Vembu | Meliaceae | Tree |
| 124 | Melia azedarach L. | Malai vempu | Meliaceae | Tree |
| 125 | Albizia lebbeck (L.) Benth | Mimisaceae | Tree |
| 126 | Moringa oleifera Lam. | Murungai | Moringaceae | Tree |
| 127 | Ensete superbum Roxb. | Kalvalai | Musaceae | Tree |
| 128 | Musa paradisiaca L. | Vazhai | Musaceae | Tree |
| 129 | Eucalyptus globus L. | Thaillamaram | Myrtaceae | Tree |
| 130 | Psidium guajava L. | Koliya | Myrtaceae | Tree |
| 131 | Syzygium cumini (L.) Skeels | Naval maram | Myrtaceae | Tree |
| 132 | Psidium guajava L. | Thaal poo | Myrtaceae | Tree |
| 133 | Mirabilis jalapa L. | Anthimantharai | Myrtaceae | Herb |
| 134 | Nymphaea alba L. | Water lily | Nymphaeaceae | Herb |
| 135 | Jasminum auriculatum Vahl | Mullai | Oleaceae | Twiner |
| 136 | Jasminum grandiflorum (Burm. f.) Andrews | Pitchi | Oleaceae | Twiner |
| 137 | Jasminum sambac (L.) Skeels | Kasturi- mallikai | Oleaceae | Twiner |
| 138 | Phyllanthus acidus (L.) Skeels | Pulipunelli | Phyllanthaceae | Tree |
| 139 | Phyllanthus amarus L. | Keelaneli | Phyllanthaceae | Herb |
| 140 | Phyllanthus emblica L. | Periya nelli | Phyllanthaceae | Tree |
| 141 | Piper betle L. | Vetrilai kodi | Piperaceae | Shrub |
| 142 | Russelia equisetiformis | Chittiramoolam | Plantaginaceae | Herb |
| 143 | Plumbago zeylanica L. | Chittiramoolam | Plumbaginaceae | Herb |
| 144 | Bambusa vulgaris Schrad ex J.C. Wendl | Mungil | Poaceae | Tree |
| 145 | Zea mays L. | Cholam | Poaceae | Herb |
| 146 | Portulaca grandiflora Hook. | Pattu rose | Portulacaceae | Herb |
| 147 | Ziziphus jujuba Mill. | Elangai | Rhamnaceae | Tree |
| 148 | Rosa domestica L. | Roja | Rosaceae | Shrub |
| 149 | Hamelia patens Jacq. | Theepputhar | Rubiaceae | Small tree |
| 150 | Isora coccinea L. | Vetchi poo | Rubiaceae | Shrub |
| 151 | Knoxia hybrid L. | Rubiaceae | Herb |
| 152 | Penta lanceolata (Forssk.) Deflers | Pavazhamalli | Rubiaceae | Shrub |
| 153 | Aegle marmelos L. | Vilva maram | Rutaceae | Tree |
| 154 | Citrus bergamia Risso | Naarthangai | Rutaceae | Tree |
| 155 | Citrus limetta Risso | Sathukudi | Rutaceae | Tree |
| 156 | Cardiospermum halicacabum L. | Kariveppilai | Sapindaceae | Tree |
| 157 | Manilkara zapota (L.) P. Royen | Sappota | Sapotaceae | Tree |
| 158 | Bambusa vulgaris Schrad ex J.C. Wendl | Unni chedi | Verbenaceae | Shrub |
| 159 | Zingiber officinale Rosc. | Thuthuvalai | Verbenaceae | Herb |
| 160 | Solanum melongena L. | Thakkaali | Solanaceae | Shrub |
| 161 | Solanum trilobatum L. | Katharika | Solanaceae | Tree |
| 162 | Solanum nigrum L. | Sundaikai | Solanaceae | Shrub |
| 163 | Withania coagulans (Stocks) Dunal | Amukura | Solanaceae | Herb |
| 164 | Lantana camara L. | Unni chedi | Verbenaceae | Shrub |
| 165 | Tectona grandis L.f. | Tekku | Verbenaceae | Tree |
178. *Cissus quadrangularis* L. Pirandai kodi Vitaceae Climber
179. *Vitis vinifera* L. ------------- Vitaceae Climber
180. *Zamia furfuracea* L. ------------- Zamiaceae Herb
181. *Curcuma longa* L. Manjal Zingiberaceae Herb
182. *Zingiber officinale* Roscoe Inji Zingiberaceae Herb

Taxonomically dicotyledons plants represent the more number of species contribute 150 species belonging to 53 families, whereas monocotyledonous plants contribute 29 species belonging to 15 families, gymnosperm presented with 2 families and 2 species and one pteridophyte species were documented in the study area.

Fabaceae (16 species and 13 Genera), Apocyanaceae (11 species and 10 Genera) and Solanaceae (9 species and 4 Genera) were the most dominant family in this home garden. Acanthaceae (7 species and 6 genera), Cucurbitaceae (7 species and 7 genera), Euphorbiaceae (7 species and 4 genera), Lamiaceae (5 species and 5 genera), Asteraceae (5 species and 5 genera), Oleaceae (5 species and 2 genera), Asparagaceae (5 species and 5 genera), Amaranthaceae (5 species and 5 genera), Rutaceae (5 species and 3 genera), Malvaceae (5 species and 5 genera), Arecaceae (5 species and 5 genera), Caealpinaceae (5 species and 4 genera), Rubiaceae (4 species and 4 genera), Araceae (3 species and 3 genera), Amaryllidaceae (3 species and 3 genera), Costaceae (3 species and 2 genera), Phylanthaceae (3 species and 1 genera), Anacardiaceae, Annonaceae, Acanthaceae, Araceae, Cactaceae, Combretaceae, Cycadaceae, Lythraceae, Meliaceae, Musaceae, Nyctaginaceae, Plantaginaceae, Poaceae, Sapotaceae, Verbenaceae, Vitaceae and Zingiberaceae were represented by two species each, whereas Acoraceae, Agavaceae, Araucariaceae, Asphodelaceae, Balsaminaceae, Basellaceae, Bignonieae, Boraginaceae, Brassicaceae, Bromeliaceae, Caricaceae, Casuarinaceae, Commelinaeae, Convulvulaceae, Cupressaceae, Elaeocarpaeae, Leguminoeae, Magnoliaceae, Mimisaceae, Moringaceae, Nymphacaeae, Orchidaceae, Palmaceae, Pandanaceae, Pedaliaceae, Piperaceae, Plumbaginaceae, Portulacaceae, Rhamnaceae, Rosaceae, Sapindaceae, Simarobaceae, Zamiaceae and Nephrolepideae (Pteridophytes) were mono specific. Zamiaceae and Cupressaceae families are gymnosperm. Nephrolepideae was presented in Pteridophytes (Table 2).

### Table No. 2: Distribution of plant families in the study area

| S. No | Family              | Genus | Species | S. No | Family              | Genus | Species |
|-------|---------------------|-------|---------|-------|---------------------|-------|---------|
| 1.    | Acanthaceae         | 6     | 7       | 36.   | Lamiaceae           | 7     | 7       |
| 2.    | Acoraceae           | 1     | 1       | 37.   | Leguminosae         | 2     | 2       |
| 3.    | Agavaceae           | 1     | 38.     | 38.   | Lythraceae          | 2     | 2       |
| 4.    | Acanthaceae         | 5     | 6       | 39.   | Magnoliaceae        | 1     | 1       |
| 5.    | Amaryllilaceae      | 2     | 2       | 40.   | Malvaceae           | 5     | 5       |
| 6.    | Anacardiaceae       | 2     | 2       | 41.   | Melfaceae           | 2     | 2       |
| 7.    | Annonaceae          | 2     | 2       | 42.   | Mimisaceae          | 1     | 1       |
| 8.    | Apiaceae            | 2     | 2       | 43.   | Moringaceae         | 1     | 1       |
| 9.    | Apocyanaceae        | 8     | 12      | 44.   | Musaceae            | 2     | 2       |
| 10.   | Araceae             | 3     | 3       | 45.   | Myrtaceae           | 3     | 3       |
| 11.   | Fabaceae            | 13    | 17      | 46.   | Nephrolepideae      | 1     | 1       |
| 12.   | Araucariaceae       | 1     | 47.     | 47.   | Nyctaginaceae       | 2     | 2       |
| 13.   | Areaceae            | 3     | 3       | 48.   | Nymphaeae           | 1     | 1       |
| 14.   | Asparagaceae        | 5     | 5       | 49.   | Orchidaceae         | 1     | 1       |
| 15.   | Asphodelaceae       | 1     | 50.     | 50.   | Oleaceae            | 2     | 5       |
| 16.   | Asteraceae          | 6     | 7       | 51.   | Palmaceae           | 1     | 1       |
| 17.   | Balsaminaceae       | 4     | 52.     | 52.   | Pandanaceae         | 1     | 1       |
| 18.   | Basellaceae         | 1     | 53.     | 53.   | Pedaliaceae         | 1     | 1       |
| 19.   | Bignoniaceae        | 1     | 54.     | 54.   | Phylanthaceae       | 1     | 3       |
| 20.   | Boraginaceae        | 1     | 55.     | 55.   | Piperaceae          | 1     | 1       |
| 21.   | Brassicaceae        | 1     | 1       | 56.   | Plantaginaceae      | 2     | 2       |
| 22.   | Bromeliaceae        | 1     | 57.     | 57.   | Plumbaginaceae      | 1     | 1       |
| 23.   | Cactaceae           | 2     | 2       | 58.   | Poaceae             | 2     | 2       |
| 24.   | Caesalpinaceae      | 2     | 2       | 59.   | Portulacaceae       | 1     | 1       |
| 25.   | Caricaceae          | 1     | 1       | 60.   | Rhamnaceae          | 1     | 1       |
| 26.   | Casuarinaceae       | 1     | 1       | 61.   | Rosaceae            | 1     | 1       |
| 27.   | Combretaceae        | 1     | 2       | 62.   | Rubiaceae           | 4     | 4       |
| 28.   | Commelinaeae        | 1     | 1       | 63.   | Rutaceae            | 3     | 5       |
| 29.   | Convulvulaceae      | 1     | 1       | 64.   | Sapindaceae         | 1     | 1       |
| 30.   | Costaceae           | 2     | 2       | 65.   | Sapotaceae          | 2     | 2       |
| 31.   | Cucurbitaceae       | 7     | 7       | 66.   | Simarobaceae        | 1     | 1       |
| 32.   | Cupressaceae        | 1     | 1       | 67.   | Solanaceae          | 4     | 10      |
| 33.   | Cuscutaceae         | 1     | 2       | 68.   | Verbenaceae         | 1     | 1       |
| 34.   | Elaeocarpaeae       | 1     | 1       | 69.   | Vitaceae            | 2     | 2       |
| 35.   | Euphorbiaceae       | 5     | 7       | 70.   | Zamiaceae           | 1     | 1       |
| 36.   | Fagaceae            | 1     | 1       | 71.   | Zingiberaceae       | 2     | 2       |
Most plant species of the study area are of considerable ecological and economic importance, useful as bio resources to wild fauna and human beings. Of the total 182 wild/naturalized plant species, most are useful as medicinal plants, and others are valuable as edible fruits, timbers, fuel wood, etc. Although food production is recognized as a basic function of home gardens, the motivation for home gardening is not always for mainly food production. With the recent studies on home gardens in Benin, they revealed high prevalence of food and medicinal plants in gardens, confirming the importance of food production in gardening, and evidencing the key importance of medicinal plant in gardening systems in Benin.

Home gardens with primarily for both food and medicinal purposes and with more functions (ornamental, protection/delimitation, and miscellaneous purposes) were found everywhere but most garden with high prevalence of ornamental plant species were also mostly found in these regions under the westernization influence. The ornamental quality of Tilzapota’s home gardens differed from that in other regions; these home gardens were mainly used for food security, to improve families’ nutrition, and for economic growth in some cases. Nevertheless, there are newly emerging positive trends in home gardening, which encourage people to maintain biodiversity in rural and urban gardens.

In developing countries the nutritional value of local, neglected horticultural species has been assessed and their cultivation in family gardens promoted to guarantee the intake of vitamins and micro-nutrients. In high-income countries the growing demand for healthier life styles and closer connection with nature has driven a renewed interest towards sustainable agricultural systems and “traditional” food products, capable of connecting consumers to the natural and cultural heritage of a community or a geographical region. Many urban citizens of the developed world have taken up some form of self-production of food in their terraces, roofs, gardens or courtyards as well as in communal areas shared among neighbours.

For all the enumerated wild and naturalized plant species, information such as botanical name, vernacular name, family and habit are provided and plant species in the checklist and their photographs are showed in (Fig3).
CONCLUSION
In this study, we observed totally of 182 plant species belonging to 159 genera and 71 families from the home gardens of Palayamkottai, Tirunelveli District. Among them, 60 species (32%) were trees, 39 species (21%) were shrubs, 61 species (33%) were herbs, 18 species (10%) were climbers and 7 species (4%) were twiner. Home gardens provide good economic and social conditions for outstanding production. They are an important production system of food, medicine and other essential products. It also provides environments in which part of the genetic diversity of many crops can be maintained. In conclusion, home gardens play a major role in the production of food, job opportunities, crop improvement, development, maintenance of the green nature and so on.

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