

Full Length Research Paper

## Assessment of plants grown and maintained in home gardens in Odeda area Southwestern Nigeria

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A survey of thirty (30) home gardens in Odeda Local Government Area (LGA) of Ogun State, Southwestern Nigeria was conducted to assess plants grown and maintained by household members and the diversity of vegetal species and their uses. Semi-structured questionnaire and structured interviews were used to collect useful information. A total of 120 plant species belonging to 50 botanical families were documented. From the data, Euphorbiaceae, Solanaceae, Rutaceae, Malvaceae, Caesalpiniaceae, Poaceae and Apocynaceae (in order of decreasing number of species) were the most frequent families. Taxa such as *Musa* species, *Vernonia amygdalina*, *Citrus* species, *Psidium guajava* and *Terminalia catapa* were found to be the common food/medicinal plants as evidenced by their densities in the study sites. The household members cited most of the plants as food; others as medicinal and ornamentals. Miscellaneous uses include cosmetics, ceremonial and scouring. Species composition, shapes/structures as well as plant uses are discussed. Home garden products serve alimentary purposes and represent promising base materials for poverty alleviation and may also help to augment “fresh” food nutrient intake. The wealth of the home gardens may be related to the rural origin and to the culture of the owners who still keep a cultivation tradition. Some plant species are frequent. This may suggest uniformity in plant use and could contribute to the conservation of local species. Home gardens can also be regarded as ‘humble’ germplasm bases; hence, the need to re-energize the productive capacity of home gardens.

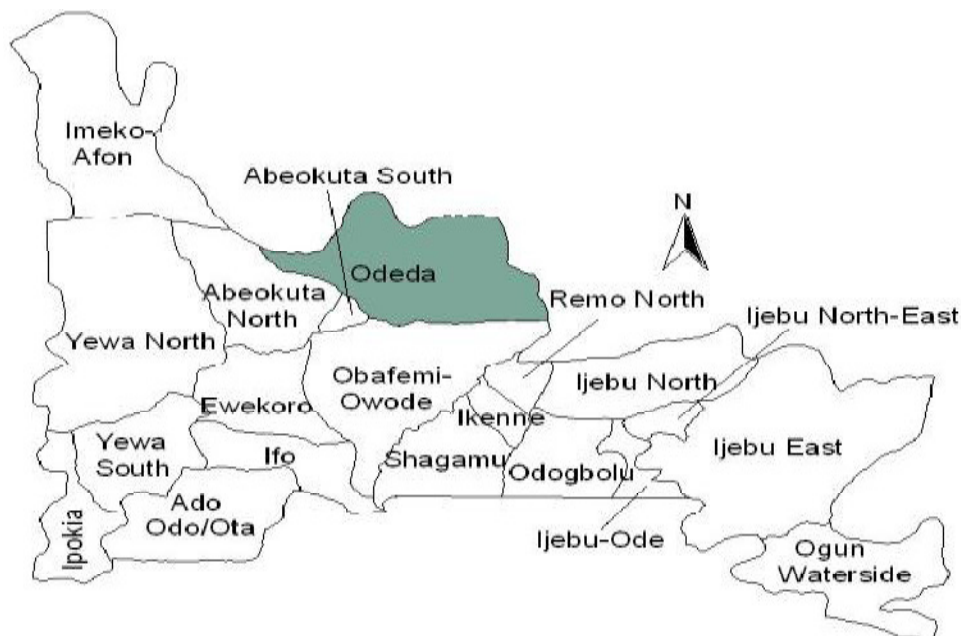
**Key words:** Agro-forest systems, home garden, ethnobotany, diversity, Odeda, Southwestern Nigeria.

### INTRODUCTION

Traditional agro-systems are constantly undergoing reforms. Of all the agro-systems, home garden is regarded to be the least understood and commands the least attention. Home gardens represent land-use systems involving deliberate management of multipurpose trees and shrubs in intimate association with annual and perennial agricultural crops and invariably livestock within the compounds of individual houses (Fernandes and Nair, 1986) and are the central points of biodiversity

conservation. Home gardens form a dominant and promising land use system in many parts of the tropics (Michon et al., 1983; Singh, 1987) and are viewed as an alternative to the ever increasing demand for food (Soemarwoto et al., 1985) particularly in West Africa. Hoogerbrugge and Fresco (1993) defined home garden as “a small scale, supplementary food production system by and for household members that mimics the natural multilayered ecosystem”. An addition to the definition to

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**Figure 1.** Map of Ogun State, Nigeria.

include the role of medicinal plants by Agelet et al. (2000) is worth considering.

Investigations on agro-forestry in tropical areas have focused on home gardens; reports from these have been described as prototype for sustainable ecological systems (Padoch and De Jong, 1991; Lamont et al., 1999; Albuquerque et al., 2005). Species diversity in tropical home gardens is reported to be very high due to species having different life forms, height and canopy structure (Babu et al., 1982; Soemarwoto and Conway, 1991). Research involving biological diversity in rural communities has intensified in recent years and its scope now extends to the semi-urban centres but mainly to locales that maintain richness of vegetation and animals, such as parks, arboretum and flower gardens. The species diversity sheltered by these locales provides resources for food, decoration, construction and medicinal uses as well as contributing to flood control and protection against soil erosion (Soemarwoto, 1987). With the development of the environmental sciences, scientists have now understood the significance of the relationship between humans and nature in the rural and/or urban environment.

Recently, just as in agro-forestry, ethnobotany (as a discipline) has dedicated increasing attention to the theme of conservation of home garden biodiversity. The diversity found in home gardens is a source of genetic variability that has been accumulated by the local populations, constituting a valuable patrimony for food security and even a source of genetic material for the improvement of species for commercial purposes (Soemarwoto et al., 1985). Structure and floristic composition vary in homegarden establishment. This study, part

of a wider project on ethnobotany on Nigeria biome, is designed to contribute to existing knowledge about the structure, usage and floristic composition of home-gardens in the Southwestern Nigeria and the relationship between homegarden sizes and species composition.

## METHODS

### Study areas

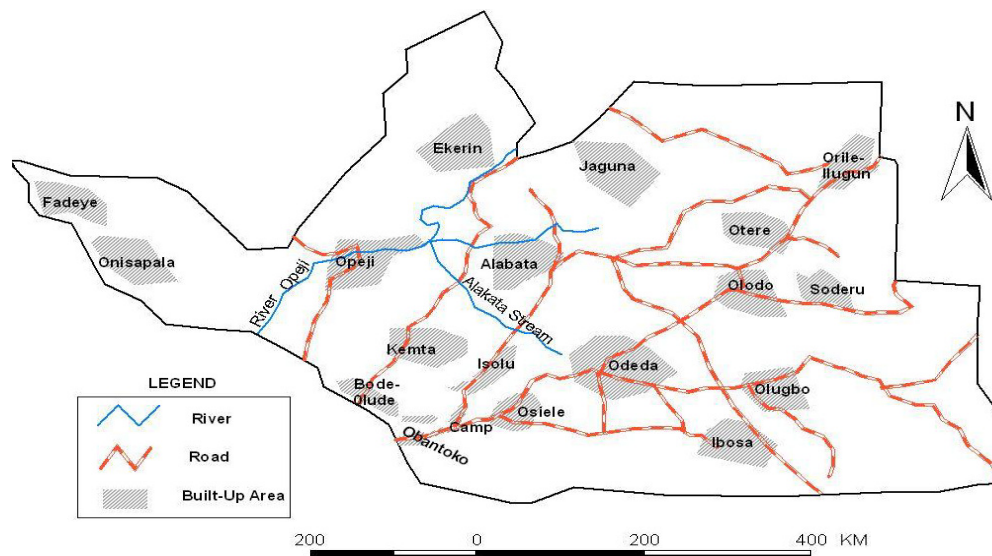
This study was carried out in Odeda Local Government Area (LGA) of Ogun State (Figure 1) located in the moderately hot, humid tropical climatic zone of Southwestern Nigeria. There are two distinct seasons: rainy season (March/April to October/November) and dry season (October/November to March/April). There are two main vegetation types in the study sites: tropical rainforest and guinea savanna. The LGA has a land area of 1547.29 km<sup>2</sup> with a population of 109449 (NBS, 2006). The headquarters of the LGA is at Odeda on the A5 highway 7°13'00"N 3°31'00"E. The climate favours the cultivation of a wide range of food crops such as rice, maize, cassava, yam, cocoyam, oil palm, vegetables and fruit trees. The economy of the areas studied is subsistence. However, surpluses are taken to markets or neighbouring towns.

### Informed consent

The purpose of the study was explained to household members in the LGA. Informed consent was obtained from each of the respondents.

### Ethnobotanical study

Field work was conducted between March, 2012 and June, 2012 in Odeda, Southwestern Nigeria. Locations selected for the survey



**Figure 2.** Geographical localization of the study sites. Source: Taiwo et al. (2011).

**Table 1.** Demographic structure of respondents.

Parameter	Specification	N (%)
Age	1 - 20	0 (0)
	21 - 40	8 (26.7)
	41 - 60	12 (40)
	>60	10 (33.3)
Gender	Male	12 (40)
	Female	18 (60)
Religion	Christianity	15 (50)
	Islam	8 (26.7)
	Traditional	7 (23.3)
Level of education	PSC	16 (53.4)
	JSSC	1 (3.3)
	SSC	7 (23.3)
	NCE	2 (6.7)
	FD	4 (13.3)
Nationality	Nigerian	30 (100)
	Non-Nigerian	0 (0)
Ethnic Identity	Yoruba	27 (90)
	Igbo and Nupe	3 (10)
Occupation	Teaching	7 (23.3)
	Transporting	7 (23.3)
	Farming	11 (36.7)
	Trading	9 (30)
	Technician	2 (6.7)

N = Number of respondents; % = Percentage of respondents.

were Obantoko, Osiele, Odeda, Olodo, Ageri, Adewusi, Kila and Orile-Ilugun (Figure 2). A total of 30 home gardens were surveyed and household members interviewed using semi-structured questionnaire to gather information on the uses of the species present in the gardens. Interviews were conducted in English Language (since all the respondents are literate). The questionnaire was in two sections. Section 1 dealt with basic demographic information. Section 2 consists of plant species present in the different home gardens, their local names, plant forms, parts used and uses. Plant specimens were collected and identified in the field. Plant specimens that could not be immediately identified in the field were taken to Forestry Herbarium, Ibadan (FHI) for identification. Voucher specimens of all species mentioned were deposited in the FHI herbarium.

#### Data analysis

Data obtained from the questionnaires were entered into the computer and analyzed using Epi6-info version 6.04 (CDC, Atlanta, GA, USA) (Dean et al., 1994).

## RESULTS

Findings from the study indicated that majority of the respondents are females (Table 1). The level of education of household members interviewed ranged from Primary School Certificate (PSC), Junior Secondary School Certificate (JSSC), Senior School Certificate (SSC), Nigeria Certificate in Education (NCE) to First Degree (FD). The ethnic groups identified are the Yoruba and Igbo. The latter incorporates the Nupe (from Benue State). All the interviewed members are literate but a good percentage is self-employed. Home gardens studied proved to be a basic agro-forestry system mainly for food, medicinal and ornamental plants and occupied an area between 53 and 583 m<sup>2</sup> with a mean of 158.5 m<sup>2</sup>

and standard deviation of 162.42. The shape, size and number of species varied for each home garden but were most commonly rectangular (63%), square (13.3%) (not perfect), triangular (3.3%). Irregular shapes (20%) were also identified. Structurally, vertical dimension took the largest percentage (53.3%), while horizontal (26.7%) and random settings (20%) were also encountered. All the species sighted were reported to be useful for several purposes. The respondents cited most as alimentary (40%). Others as medicinal (28%), ornamental (25%), shade (4.7%) and miscellaneous uses (2.3%). Some plants considered as food are also used in culinary, while some others serve both as fruit plants and shade such as *Terminalia catapa*, *Mangifera indica*, and *Cocos nucifera*. From the 30 home gardens surveyed, 120 different species of plants were found and these are distributed among 50 botanical families (Tables 2 and 3). The most represented families are Euphorbiaceae, Solanaceae, Rutaceae, Malvaceae, Caesalpiniaceae, Poaceae and Apocynaceae in order of decreasing number of species. Two groups of plants were found in the studied sites. Group 1: plants grown and maintained. Group 2: naturally established plants but maintained. In the latter case, plants cited were *Ficus exasperata*, *Nicotiana tabaccum*, *Newbouldia laevis*, *Gmelina arborea*, *Azadirachta indica*, and *Glyricidia sepium*. Others include *Talinum triangulare* and *Phyllanthus amarus* (only used, not maintained). Some of the plants are grown because of their seasonal importance. Such plants include *Zea mays*, *Saccharum officinarum*, *Sorghum bicolor* and *Dioscorea* species. Variation in species composition was not large throughout the 30 home gardens studied. Taxa such as *Musa* spp., *Vernonia amygdalina*, *Citrus* spp., *Psidium guajava* and *T. catapa* were found to be the common food/medicinal plants across home gardens surveyed and had the highest density. All plant life forms were duly represented (Table 4) with herb taking the largest share (31.6%) and culm (0.8%) the lowest. Table 5 shows the plant parts used and their frequencies. The leaves form the major part of plant used followed by whole plant - as ornamentals. Ornamental species such as *Delonix regia*, *Dieffenbachia amoena*, *Acalypha ornata*, *A. ciliata*, and *Aloe vera* are often arranged in courtyards or at the frontage of the building.

## DISCUSSION

Since the beginning of agriculture, people have cultivated many varieties of useful plants. Botany is a subject developed out of the study of agriculture and medicine (Dutta, 2008). The first medical uses of plants are lost in antiquity but evidence exists that plants were widely used for such purposes long before history (Hufford, 1978). Ethnobotany makes clear the connection between human cultural practices and plant utilization. In the study of Ethnobotany today, home gardens and their roles as

biodiversity conservation centres cannot be over-emphasized.

Plant domestication represents a major achievement. The study of indigenous cultivation, food production, local medicinal knowledge and varied use of vegetal species has implications for food nutrient augmentation as well as discovering new medicines. The diverse uses of plants indicated in this study point to the fact that home gardens have been used to cultivate not only vegetables, but also medicinal and other miscellaneous plants. Cosmetics, scouring and ceremonial are classified in this work as miscellaneous or rare uses. All the alimentary species from the family Lamiaceae were used as condiments, indicating their important role in diversifying the flavour of food. The gardens studied are subsistence in nature [based on their mean size and according to the classification of Fernandes and Nair (1986)]. Home gardens have the function of guaranteeing subsistence as well as complementing the household income, for instance, taxa such as *Amaranthus* and *Celosia* species are cultivated on small commercial scale. In the same way, as the family income of the respondents did not change too much, the richness of species also did not change significantly.

The most representative families in this study have also been cited in previous studies that were focused on old urban home gardens by Eichenberg et al. (2009) and Albuquerque et al. (2005). The most widely used medicinal plants (*V. amygdalina*, *Jatropha* spp., *Cympobogon citratus*) have again been implicated in this study. The leaves form the most used plant part. This is in line with similar ethnobotanical studies by Adekunle (2008), Ayodele (2005) and Erinoso and Aworinde (2012).

The physical appearance of home gardens is species composition dependent. The horizontal and vertical arrangements of species form the two structural components of home gardens (Millat et al., 1996). A systematic distribution pattern was not recognized in this study as against the pattern reported by Caballero (1992) as some gardens have plant species haphazardly distributed; typical of random pattern. The lack of unified methodology in the study of home garden (Albuquerque et al., 2005) makes home garden structure to vary in different regions (Soemarwoto et al., 1985).

Women play a significant role in home garden maintenance, although the idea of establishment is solely that of men. This is evidenced from the number of females interviewed. They tend to maintain the aesthetic feature of their environment. Most of the ornamentals especially the herbaceous species are potted. Not all the medicinal plants sighted are grown. Some established naturally but were later maintained when the use value was discovered. These plant species may have been introduced by agents of dispersal such as birds, wind and explosive mechanism, especially those ones that are propagated by seeds. This study has once again proved

**Table 2.** List of plant species found in home gardens in Odeda Area, Southwestern Nigeria.

Species	Family	Habit	Part(s) used	Use(s)
<i>Citrus sinensis</i>	Rutaceae	Tree	Fruit	f
<i>Lawsonia inermis</i>	Lythraceae	Tree	Leaf	cs
<i>Calotropis procera</i>	Asclepiadaceae	Shrub	Milky latex	fp
<i>Jatropha gossipifolia</i>	Euphorbiaceae	Shrub	Leaf	m
<i>Jatropha curcas</i>	Euphorbiaceae	Shrub	Leaf	m
<i>Acalypha ornata</i>	Euphorbiaceae	Herb	Whole plant	or
<i>Acalypha ciliata</i>	Euphorbiaceae	Herb	Whole plant	or
<i>Aloe vera</i>	Asphodelaceae	Herb	Leaf	or, m
<i>Aloe barbadensis</i>	Asphodelaceae	Herb	Leaf	or, m
<i>Psidium guajava</i>	Myrtaceae	Tree	Fruit/Whole plant	f, sh
<i>Ocimum gratissimum</i>	Lamiaceae	Shrub	Leaf	c, m
<i>Musa paradisiaca</i>	Musaceae	Herb	Fruit	f
<i>Musa sapientum</i>	Musaceae	Herb	Fruit	f
<i>Corchorus olitorius</i>	Tiliaceae	Herb	Leaf	f
<i>Vernonia amygdalina</i>	Asteraceae	Shrub	Leaf	m, c
<i>Amaranthus hybridus</i>	Amaranthaceae	Herb	Leaf	f
<i>Celosia argentea</i>	Amaranthaceae	Herb	Leaf	f
<i>Capsicum chinensis</i>	Solanaceae	Shrub	Fruit	c
<i>Capsicum frutescens</i>	Solanaceae	Shrub	Fruit	c
<i>Ananas comosus</i>	Bromeliaceae	Herb	Fruit	f, m
<i>Carica papaya</i>	Caricaceae	Tree	Fruit/Leaf	f, m
<i>Abelmoschus esculenta</i>	Malvaceae	Herb	Fruit	f, c
<i>Nicotiana tabacum</i>	Solanaceae	Herb	Leaf	sn, m
<i>Cajanus cajan</i>	Papilionaceae	Tree	Leaf	m
<i>Zea mays</i>	Poaceae	Grass	Seed	f
<i>Dieffenbachia amoena</i>	Araceae	Herb (Cane)	Whole plant	or
<i>Theobroma cacao</i>	Sterculiaceae	Tree	Seed	b
<i>Citrus medica</i>	Rutaceae	Tree	Fruit	m
<i>Morinda lucida</i>	Rubiaceae	Tree	Leaf	m
<i>Lycopersicon esculentum</i>	Solanaceae	Shrub	Fruit	c, f
<i>Cocos nucifera</i>	Arecaceae	Tree	Fruit (Endosperm)	f, m
<i>Cymbopogon citratus</i>	Poaceae	Grass	Leaf	m
<i>Ficus exasperata</i>	Moraceae	Tree	Leaf	m, sc
<i>Mangifera indica</i>	Anacardiaceae	Tree	Fruit	f
<i>Bougainvillea speciosa</i>	Nyctaginaceae	Climber	Whole plant	or
<i>Tabebuia rosea</i>	Bignoniaceae	Tree	Whole plant	or
<i>Bryophyllum pinnatum</i>	Crassulaceae	Herb	Leaf/Whole plant	m, or
<i>Duranta repens</i>	Verbenaceae	Shrub	Whole plant	or
<i>Croton zambesicus</i>	Euphorbiaceae	Tree	Whole plant/Leaf	or, m
<i>Annona muricata</i>	Annonaceae	Tree	Fruit	f
<i>Eugenia uniflora</i>	Myrtaceae	Shrub	Whole plant	or
<i>Eucalyptus torelliana</i>	Myrtaceae	Tree	Whole plant	or
<i>Hibiscus rosa-sinensis</i>	Malvaceae	Shrub	Whole plant	or
<i>Caesalpinia pulcherima</i>	Caesalpiniaceae	Shrub	Whole plant	or
<i>Delonix regia</i>	Caesalpiniaceae	Tree	Whole plant	or
<i>Spondias mombim</i>	Anacardiaceae	Tree	Fruit	f
<i>Gossypium hirsutum</i>	Malvaceae	Shrub	Fruit	m
<i>Zingiber officinale</i>	Zingiberaceae	Herb	Rhizome	m, c
<i>Anacardium occidentale</i>	Anacardiaceae	Tree	Fruit	f
<i>Telfaria occidentalis</i>	Cucurbitaceae	Climber	Leaf	m, c
<i>Tectona grandis</i>	Verbenaceae	Tree	Whole plant	sh

Table 2. Contd.

<i>Annona squamosa</i>	Annonaceae	Shrub	Fruit	f
<i>Artocarpus communis</i>	Moraceae	Tree	Fruit	f
<i>Kalanchoe tomentosa</i>	Crassulaceae	Herb	Whole plant	or
<i>Glyphaea brevis</i>	Tiliaceae	Shrub	Stem	ce
<i>Citrus aurantifolia</i>	Rutaceae	Tree	Fruit	m
<i>Abrus precatorius</i>	Papilionaceae	Climber	Leaf	m
<i>Newbouldia laevis</i>	Bignoniaceae	Tree	Leaf	ce
<i>Ricinus communis</i>	Euphorbiaceae	Shrub	Seed (oil)	m
<i>Cycas circinalis</i>	Cycadaceae	Palm	Whole plant	or
<i>Cycas revoluta</i>	Cycadaceae	Palm	Whole plant	or
<i>Colocasia esculenta</i>	Araceae	Herb	Corm	f
<i>Saccharum officinarum</i>	Poaceae	Culm	Stem	f
<i>Citrus reticulata</i>	Rutaceae	Tree	Fruit	f
<i>Terminalia catapa</i>	Combretaceae	Tree	Fruit/Whole plant	f, sh
<i>Basella alba</i>	Chenopodiaceae	Climber	Leaf	c
<i>Citrus lunatus</i>	Cucurbitaceae	Creeper	Fruit	f
<i>Sorghum bicolor</i>	Poaceae	Grass	Seed	f
<i>Ipomoea batatas</i>	Convolvulaceae	Creeper	Tuber	f
<i>Euphorbia milli</i>	Euphorbiaceae	Herb	Whole plant	or
<i>Acalypha wilkesiana</i>	Euphorbiaceae	Herb	Whole plant	or
<i>Sanseveria laurentii</i>	Liliaceae	Shrub	Whole plant	or
<i>Hibiscus sabdarifa</i>	Malvaceae	Shrub	Leaf	m, be
<i>Talinum triangulare</i>	Portulacaceae	Herb	Leaf	c
<i>Moringa oleifera</i>	Moringaceae	Tree	Leaf	m
<i>Ficus benjamina</i>	Moraceae	Tree	Whole plant	sh
<i>Gmelina arborea</i>	Verbenaceae	Tree	Whole plant	sh
<i>Ixora coccinea</i>	Rubiaceae	Shrub	Whole plant	or
<i>Ixora ludiflora</i>	Rubiaceae	Shrub	Whole plant	or
<i>Elaeis guinensis</i>	Arecaceae	Tree	Seed (Oil)	c
<i>Murraya paniculata</i>	Rutaceae	Shrub	Whole plant	or
<i>Codiaeum variegatum</i>	Euphorbiaceae	Herb	Whole plant	or
<i>Thuja occidentalis</i>	Cupressaceae	Tree	Whole plant	or
<i>Senna alata</i>	Caesalpiniaceae	Shrub	Leaf	m
<i>Azadiractha indica</i>	Meliaceae	Tree	Leaf	m
<i>Solanum macrocarpon</i>	Solanaceae	Herb	Fruit	f
<i>Dioscorea alata</i>	Dioscoreaceae	Climber	Tuber	f
<i>Heliotropicum indicum</i>	Boraginaceae	Herb	Leaf	m
<i>Thymus bifida</i>	Lamiaceae	Herb	Leaf	c
<i>Leucena leucocephala</i>	Mimosaceae	Tree	Leaf	m
<i>Basella rubra</i>	Chenopodiaceae	Climber	Leaf	c
<i>Parquetina nigrescens</i>	Asclepiadaceae	Climber	Leaf	m
<i>Lactuca taraxacifolia</i>	Asteraceae	Herb	Leaf	m
<i>Glyricedium sepium</i>	Papilionaceae	Tree	Leaf	m, sh
<i>Solanum dasyphyllum</i>	Solanaceae	Shrub	Fruit	m
<i>Talinum paniculata</i>	Portulacaceae	Herb	Leaf	c
<i>Hura crepitans</i>	Euphorbiaceae	Tree	Whole plant	or
<i>Senna siamea</i>	Caesalpiniaceae	Tree	Whole plant	sh
<i>Agave americana</i>	Amaryllidaceae	Herb	Whole plant	or
<i>Indian forma</i>	Lauraceae	Shrub	Whole plant	or
<i>Manihot esculentum</i>	Euphorbiaceae	Shrub	Underground stem	f
<i>Croton variegatum</i>	Euphorbiaceae	Shrub	Whole plant	or
<i>Crassocephalum crepidiodes</i>	Asteraceae	Herb	Leaf	c

**Table 2.** Contd.

<i>Canna indica</i>	Cannaceae	Herb	Whole plant	or
<i>Euphorbia laterifolia</i>	Euphorbiaceae	Herb	Whole plant	or
<i>Mirabilis jalapa</i>	Nyctaginaceae	Herb	Whole plant	or
<i>Cordyline terminalis</i>	Liliaceae	Shrub	Whole plant	or
<i>Phyllanthus amarus</i>	Euphorbiaceae	Herb	Leaf	m
<i>Thevetia peruviana</i>	Apocynaceae	Shrub	Whole plant	or
<i>Polyalthia longifolia</i>	Annonaceae	Tree	Whole plant	or
<i>Sesamum indicum</i>	Pedaliaceae	Herb	Seed (Oil)	m
<i>Alstonia boonei</i>	Apocynaceae	Tree	Leaf/Whole plant	m, sh
<i>Cnidioscolus acotifolius</i>	Euphorbiaceae	Shrub	Leaf	c
<i>Rauvolfia vomitoria</i>	Apocynaceae	Shrub	Leaf	m
<i>Plumera alba</i>	Apocynaceae	Herb	Whole plant	or
<i>Cactus spp.</i>	Cactaceae	Herb	Whole plant	or
<i>Dracaena manni</i>	Liliaceae	Herb	Whole plant	or
<i>Hyptis bracteolate</i>	Lamiaceae	Herb	Leaf	m
<i>Thaumatococcus danielli</i>	Maranthaceae	Herb	Leaf	m
<i>Crecentia cujete</i>	Bignoniaceae	Tree	Fruit	m

m, Medicinal; c, culinary/condimental; or, ornamental; sh, shade; sc, scouring; sn, snuff; be, beverage; ce, ceremonial; f, food; co, cotton; fp, food processing.

**Table 3.** Plant distribution according to families.

Family	No. of species	Family	No. of species
Euphorbiaceae	15	Nyctaginaceae	2
Solanaceae	6	Crassulaceae	2
Rutaceae	5	Cucurbitaceae	2
Apocynaceae	4	Cycadaceae	2
Malvaceae	4	Portulacaceae	2
Caesalpiniaceae	4	Chenopodiaceae	2
Poaceae	4	Lythraceae	1
Myrtaceae	3	Bromeliaceae	1
Lamiaceae	3	Caricaceae	1
Asteraceae	3	Sterculiaceae	1
Papilionaceae	3	Zingiberaceae	1
Rubiaceae	3	Combretaceae	1
Moraceae	3	Convolvulaceae	1
Anacardiaceae	3	Moringaceae	1
Bignoniaceae	3	Cupressaceae	1
Verbenaceae	3	Meliaceae	1
Annonaceae	3	Dioscoreaceae	1
Liliaceae	3	Boraginaceae	1
Asclepiadaceae	2	Mimosaceae	1
Amaranthaceae	2	Amaryllidaceae	1
Asphodelaceae	2	Lauraceae	1
Musaceae	2	Cannaceae	1
Tiliaceae	2	Pedaliaceae	1
Araceae	2	Cactaceae	1
Arecaceae	2	Maranthaceae	1

**Table 4.** Plant life form and their frequency.

Habit	Frequency
Herb	38
Tree	37
Shrub	30
Climber	7
Grass	3
Creeper	2
Palm	2
Culm	1

**Table 5.** Frequency of plant parts used.

Plant part	Frequency
Leaves	42
Whole plant	39
Fruits	25
Seeds	6
Stem	2
Tuber	2
Milky latex	1
Corm	1
Rhizome	1
Underground stem	1

that home gardens are useful sources of plant germplasm. But together with the germplasm conserved in the home gardens, it is extremely important to maintain the knowledge regarding these species and varieties. And as such new generations should be encouraged to recover and re-energize the productive capacity of homegardens.

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