

## FLORICULTURE AND NATIONAL ECONOMY: A CASE STUDY OF THE JOS-PLATEAU, NORTH-CENTRAL NIGERIA

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### ABSTRACT

A survey of ornamental plants cultivated in and around the Jos-Plateau, Nigeria was carried out in two Local Government Areas; twenty-five gardens were surveyed. The study identified 222 ornamental plants by their common and scientific names, families, source, mode of propagation, growth habit, economic value, aesthetic value and the cost of maintenance. The species identified were distributed in 78 families. Sixty-eight per cent of the species identified were exotic while 32% were indigenous. A higher number of exotic species was observed in Jos-South than in the Jos-North. Seventy-seven per cent of the species are propagated vegetatively and 23% by seed. The results showed that more perennial (89%) are cultivated than biennial (3%) or annual (8%) plants. The cost distribution showed that prices varied depending on the plant species. Thirty per cent of the species were cultivated as outdoor plants, 22% as indoor, 31% in Parks and Gardens, 11% as shade trees, 6% as avenue plants and 0.5% as lawn. It is suggested that Government should take advantage of the unique climate of the Jos-Plateau and channel efforts aimed at introducing exotic species as well as improving the indigenous ones. This could broaden the revenue base of the state and Nigeria.

**Keywords:** Floriculture; National Economy; Jos-Plateau

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### INTRODUCTION

The term ‘ornamental’ connotes the practice of planting flowering plants, especially for aesthetic purposes. Richard (2001) defined ornamental plants as perennial, deciduous and evergreen trees, conifers and shrubs grown in horticultural production by the commercial nursery industry. Ornamental plants also include herbaceous and woody indoor and outdoor landscape, broad-leaf plants, grasses and plants produced by traditional floricultural and nursery techniques within green houses, shaded structures and under environmental factors significantly modified to favour healthy and profitable plant growth. Ornamental plants are the group of cultivated and wild plants, including representatives of various plant families used to provide greenery in cities and outside public buildings and residences.

As one travels through the cities in Nigeria including the Jos-Plateau, one is enthralled by the aesthetic beauty resulting from different species of ornamental plants along the roadsides, walkways, lawns, path surfaces, in gardens, modern homes, palaces and institutions. While some of the ornamental plants are indigenous, others are exotic species, which have been introduced mainly for commercial purposes. A good number of them have undergone mutation, leading to changes in their form, size, colour and economic value.

The Jos-Plateau environment is suited to the cultivation of different types of ornamental plants (indigenous and exotic) due to its unique climatic and physiographic features. It is located within latitude 9° 30' 5" N-9° 39' 00" N and longitude 8° 19' 00" E-8° 32' 5" E, with the highest point at approximately 1,829 metres above sea level. The temperature is below 10°C from December to January. The period of April to October is characterised by abundant orographic rainfall that gives the area luxuriant lush-green vegetation.

The evergreen shade trees, ground covers, conifers, shrubs, flowers, grasses and the palms are cultivated as indoor and outdoor plants to beautify the environment and to add value to life. Ornamental plants also act as a barrier to wind, provide cool shade, reduce erosion, cleanse the air and water of pollutants like dust, chemicals, reduce noise pollution and provide food and habitat for wildlife. The economic and emotional importance of ornamental plants is so vast that there is the need for the documentation of the species cultivated on the Jos-Plateau. This is more so that many of the people involved in the cultivation of these plants are not professionals but people who are merely interested in their commercial values. The documentation will serve as a baseline for further research into their domestication, multiplication and exportation. This study was, therefore, aimed at surveying some gardens in and around the Jos-Plateau metropolis in order to:

- (i) identify the most commonly cultivated ornamental plants, and
- (ii) identify the origin of these plants, their mode of propagation, their economic and aesthetic values.

#### MATERIALS AND METHODS

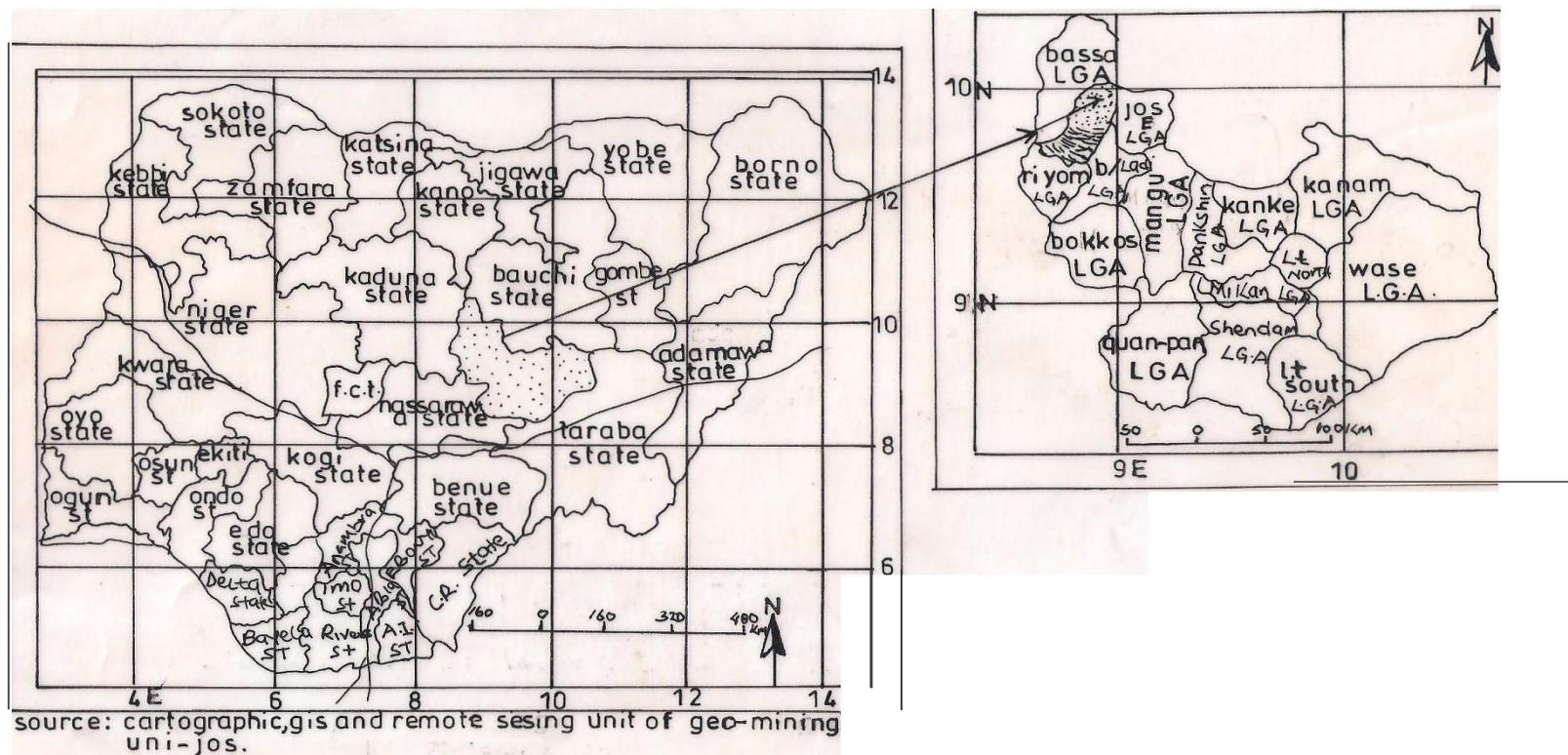
The study was carried out in Jos-North and Jos-South Local Government Areas of Plateau State, north-central Nigeria (Figure 1). The study area lies within latitude  $9^{\circ} 30' 5''$  N- $9^{\circ} 39' 00''$  N and longitude  $8^{\circ} 19' 00''$  E- $8^{\circ} 32' 5''$  E. The Jos-North LGA comprises the Berom, Anaguta and Afizere, while the Jos-South comprises mainly the Berom people. The other tribes are migrants from different parts of the country including the Yorubas, the Hausas, the Igbos and the Bajjus who came as traders, miners, civil servants and missionaries. The 2006 demographic records estimated the population of the Jos-North at 447,217 and the Jos-South at 311,392. The climate is characterised by two seasons: rainy (April-October) and dry (November-March). It is marked by appreciable rainfall and relative humidity, the peak of which is between the months of July and August. The average temperature ranges from  $26.7^{\circ}\text{C}$  ( $80^{\circ}\text{F}$ ) to  $12.8^{\circ}\text{C}$  ( $55^{\circ}\text{F}$ ) in the dry season (Geology and Mining Department, University of Jos, Jos, Nigeria).

Both indigenous and exotic breeds of flora acclimatise and thrive on the Jos- Plateau due to its rich physiography. The physico-chemical and biological characteristics of the soil make it possible for a variety of both temperate and tropical crops to thrive.

Plants surveyed were classified based on the family, mode of propagation, growth habit, economic value, aesthetic value and cost of maintenance. Twenty-five (25) gardens, including 17 from Jos-North and 8 from Jos-South Local Government Areas were surveyed using the following methods:

**Administration of Questionnaires:** The twenty-five gardens surveyed in the two Local Government Areas include Plateau State Ministry of Agriculture and Natural Resources, Vom; Solomon Lar Amusement Park, Jos; Lush Exterior Garden, Bukuru; Dr. Okon's Garden, Bukuru; Just Relax Garden, CBN Road, Jos; Zoological Garden, Jos; National Commission for Museums and Monuments, Jos; Federal College of Forestry Nursery Unit, Jos; Plateau Agricultural Development Programme (PADP), Dogon-Dutse, Jos and Government House, Rayfield, Jos. A questionnaire was administered on the proprietors/proprietresses of the gardens. The questionnaire focused on the occupation, age, common name, scientific name, family, source, mode of propagation, growth habit, economic value, aesthetic value and cost of maintenance. A total of 80 questionnaires were administered.

**Oral Evidence:** Relevant information was sourced from household dealers and experts on ornamental plants.



**FIG. 1: NIGERIA, PLATEAU STATE SHOWING THE STUDY AREA**

**Data collection from secondary sources:** Secondary sources of information were used to obtain some relevant data. These include published materials from Jim (1974), James (1980), Yvonne (1981), Penelope (1981), Stanley (1982,) Pearson (1985), FAO/UNESCO (1990), Geofit (1990), Henry and Cie (1990), Hamlyn (1992), Fraser (1993), Peter (1995), David (1996), Julie (1996), Roy (1997), Jude *et al.* (1999), Larson (2001), George (2004) and Gray (2009).

**Use of Photographs:** The plants surveyed were photographed for proper identification by experts in horticultural studies and by using the compendium of ornamental plants and the internet. The herbarium sections of the Federal College of Forestry, Jos and the International Institute of Tropical Agriculture (IITA), Ibadan, were also consulted for the identification of some of the plants.

## RESULTS

A total of seventeen gardens were surveyed in the Jos-North Local Government Area. One hundred and seventy-one (171) plant species were identified in the gardens surveyed, which were distributed in 59 families. The family Araceae had the highest number of 14 species, followed by the family Euphorbiaceae with 11 species (Table 1).

In the Jos-South Local Government Area, 8 gardens were surveyed out of which one hundred and 166 species were identified. The species were distributed in 74 families. Again, the family Araceae had the highest number of 18 species, followed by the family Euphorbiaceae with 9 species (Table 2). On the basis of origin, 59 out of the 171 species identified in the Jos-North Local Government Area were indigenous while the rest were exotic. In the Jos-South Local Government Area, 137 species identified were exotic while the remaining 29 were indigenous (Table 3).

Of the total number of species identified in all the gardens in the two Local Government Areas, 77% were reported to be propagated vegetatively (by stem, leaf or cane cuttings as well as by layering, division, offset and plantlets), while 23% were propagated by seed (Table 4).

Table 5 shows species distribution based on growth habit. Eight (8) per cent of the species surveyed in the two Local Government Areas were identified as annuals, 3 per cent as biennials and 89 per cent as perennials. Of the total number of species identified in the gardens, 44% was reported to sell for between ₦100 and ₦500; 36% for ₦501- ₦1,000; 15% for ₦1,001- ₦5,000; 2% for ₦5,001- ₦10,000; 2% for ₦10,001- ₦20,000 and above (Table 6).

Based on aesthetic value, 11 per cent of the species identified were shade trees, 31% were used in parks and gardens, 6% as avenue plants, 30% as outdoor plants, 22% as indoor plants and 0.5% as lawn (Table 7). The analysis of the cost of maintaining the species identified revealed that 27% of the species had low cost of maintenance while 67% had moderate cost of maintenance; the remaining 7% had a high cost of maintenance (Table 8). The analysis of the total distribution of species in the two Local Government Areas shows that 222 species of ornamental plants were surveyed during the study. The species were distributed in 71 families. The highest number of 19 species was recorded for the family Araceae and this was followed by the family Euphorbiaceae with 12 species. Thirty-one (31) per cent of the species surveyed were indigenous, while 69 per cent were exotic (Tables 9, 10 and 11). The analysis of the occupational distribution of the respondents revealed that 17 out of the 25 respondents were private owners of the gardens while the remaining 8 were government employees (Table 12).

Table 1: Species distribution in gardens surveyed in Jos-North Local Government Area of Plateau State

S/N	Name of Garden	No of Species	Family Distribution
1.	Plateau State Ministry of Agriculture, Jos	25	Verbanaceae(1)*, Araucariaceae (1), Cactaceae (3), Euphorbiaceae (5), Cycadaceae (1), Moraceae (1), Commelinaceae (1), Araceae (6), Rosaceae (1), Fabaceae (1), Agavaceae (1), Begoniaceae (1), Apocynaceae (2)
2.	Plateau Agricultural Development Programme (PADP)	34	Cactaceae (4), Myrtaceae (2), Annonaceae (3), Commelinaceae (1), Araceae (1) Moraceae (2), Celestraceae (1), Portulacaceae (4), Poaceae (1), Pinaceae (1), Vitaceae(1), Verbaceae (2), Malvaceae (3), Crassulaceae (1), Nyctaginaceae (1), Cycadaceae (1), Asparaceae (2). Anocvnaceae (2). Aizoaceae (1)
3.	Plateau (Nig.) Horticultural Society Garden on lease to Baxta, opposite Plateau State	32	Acanthaceae (3), Amaranthaceae (2), Apocynaceae (3), Araceae (12), Bromeliaceae (1), Euphorbiaceae (2), Burseraceae (1), Cactaceae (3), Iridaceae (1), Ruscaceae (1), Araliaceae (1), Liliaceae (2).
4.	Federal College of Forestry, Jos	32	Annonaceae (1), Verbenaceae (1), Euphorbiaceae (4), Celestraceae (1), Agavaceae (1), Begoniaceae (1), Commelinaceae (1), Moraceae (2), Crassulaceae (1), Portulacaceae (2), Cactaceae (2), Myrtaceae (1), Bignoniaceae (1), Araucauaceae (1), Fabaceae (2), Apocynaceae (2), Cupressinaceae (2), Liliaceae (1), Marantaceae (2), Malvaceae (1), Nephrolepidaceae (1), Chenopodiaceae (1)
5.	Federal Department of Agriculture Opposite University of Jos, Bauchi Road	18	Cactaceae (3), Agavaceae (1), Araceae (3), Bignoniaceae (1), Celestraceae (1), Verbanaceae (1), Euphorbiaceae (4), Fabaceae (1), Moraceae (2), Myrtaceae (1)
6.	YARIB Garden, Bauchi Road, Jos	68	Euphorbiaceae (4), Araceae (9), Rosaceae (1), Verbanaceae (5), Araceae (3), Araucariaceae (1), Pinaceae (2), Cactaceae (3), Nyctaginaceae (2), Vitaceae (1), Urticaceae (2), Solanaceae (1), Sapindaceae (2), Ruscaceae (1), Rubiaceae (3), Pteridaceae (1), Oleaceae (1), Marantaceae (4), Palmaceae (1), Lauraceae (1), Fabaceae (4), Crassulaceae (3), Convolvulaceae (1), Begoniaceae (4), Asteraceae (2), Araliaceae (4), Aracaceae (1), Acanthaceae (1)
7.	Zoological Garden, National Commission for Museums and Monuments, Jos	60	Rosaceae (1), Verbanaceae (2), Euphorbiaceae (5), Arecaceae (2), Araceae (7), Cupressaceae (2), Cactaceae (5), Asparagaceae (2), Araucariaceae (1), Moraceae (4), Cycadaceae (1), Crassulaceae (1), Begoniaceae (2), Bignoniaceae (3), Marantaceae (3),

		Palmaceae (1), Rubiaceae (2), Fabaceae (3), Annonaceae (1), Apocynaceae (1), Asteraceae (3), Convolvulaceae (1), Nytaceae (1), Acanthaceae (2), Sapindaceae (1), Poaceae (1), Dryopteridaceae(1), Cactaceae (1).	
8.	Diamond Garden Museum, Jos	12	Araceae (3), Araucariaceae (1), Aracaceae (4), Acanthaceae (2), Aizoaceae (1), Moraceae(1)
9.	ESLEE Garden and Tourist Centre, CBN Area, Jos	21	Araceae (5), Cactaceae (2), Euphorbiaceae (3), Bromeliaceae (1), Aizoaceae (1), Arecaceae (3), Begoniaceae (2), Bignoniaceae (1), Verbanaceae (1), Vitaceae (1), Chenopodiaceae (1)
10.	Just Relax Garden, CBN Area, Jos	17	Araceae (2), Euphorbiaceae (4), Cactaceae (3), Agavaceae (5), Liliaceae (1), Sapindaceae (1), Solanaceae (1)
11.	All Green Garden, CBN Area, Jos	73	Araceae (11), Aizoaceae (1), Aracaceae (4), Palmaceae (1), Amaranthaceae (3), Asparagaceae (1), Asteraceae (5), Begoniaceae (3), Commelinaceae (1), Euphorbiaceae (10), Fabaceae (6), Sapindaceae (2), Ranunculaceae (5), Liliaceae (2), Crassulaceae (4), Cyperaceae (2), Lamiaceae (2), Heliconiaceae (1), Malvaceae (1), Poaceae (1), Cactaceae (5), Rosaceae (2).
12.	Cabbage Garden, CBN Area, Jos	29	Commelinaceae (1), Rosaceae (1), Agavaceae (1), Fabaceae (2), Cactaceae (2), Araceae (3), Pinaceae (1), Araucariaceae (1), Cupressaceae (2), Euphorbiaceae (4), Fabaceae (1), Nephrolepidaceae (2), Vitaceae (1), Marantaceae (4), Crassulaceae (2), Verbanaceae (1)
13.	MEGA Green Garden, CBN Area, Jos	45	Araceae (5), Arecaceae (4), Euphorbiaceae (5), Aizoaceae (1), Poaceae (1), Cactaceae (3), Bromeliaceae (6), Verbanaceae (2), Fabaceae (2), Pinaceae (2), Moraceae (3), Amaranthaceae (3), Marantaceae (2), Araucariaceae (1), Crassulaceae (1), Dryopteridaceae (1), Strelitziaceae (1), Rubiaceae (1), Podocarpaceae (1).
14.	Faith Garden, CBN Area, Jos	52	Araceae (13), Araliaceae (2), Aracaceae (5), Asclepiadaceae (1), Asparagaceae (2), Balsaminaceae (1), Begoniaceae (3), Cocoseae (1), Cucurbitaceae (1), Cycadaceae (1), Portulacaceae (1), Verbanaceae (3), Rubiaceae (4), Nyctaginaceae (1), Myrtaceae (1), Nephrolepidaceae (1), Marantaceae (1), Poaceae(1), Bromeliaceae (2).
15.	DAVALEE Garden, CBN Area, Jos	23	Araceae (1), Asteraceae (2), Moraceae (1), Arecaceae (2), Euphorbiaceae (4), Araliaceae

		(1), Bromeliaceae (1), Bignoniaceae (2), Verbanaceae (3), Cactaceae (1), Aizoaceae (1), Agavaceae (2), Annonaceae (1), Rosaceae (1)
16.	YATS Garden, CBN Area, Jos	24 Verbanaceae (4), Araceae (5), Aizoaceae (1), Agavaceae (1), Araliaceae (1), Arecaceae (2), Bignoniaceae (1), Asteraceae (3), Begoniaceae (4), Cactaceae (2)
17.	LUJI Garden around COCIN	19 Liliaceae (3), Cactaceae (4), Agavaceae (1), Arecaceae (2), Araceae (4), Verbanaceae (1), Headquarters, Jos Aizoaceae (1), Araucariaceae (1), Moraceae (1), Rosaceae (1).

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\* Number in parenthesis indicates the total number of species identified in each family.

Table 2: Species distribution in gardens surveyed in Jos-South Local Government Area of Plateau State

S/N	Name of Garden	No of Species	Family Distribution
1.	LUSH Exterior, Bukuru	62	Vitaceae (2)*, Verbanaceae (3), Urticaceae (1), Scrophulariaceae (1), Solanaceae (1), Sapindaceae (2), Ruscaceae (2), Rubiaceae (1), Rosaceae (1), Ranunculaceae (1), Pteridaceae (1), Poaceae (1), Polypodiaceae (1), Palmaceae (1), Malvaceae (2), Moraceae (2), Marantaceae (4), Liliaceae (1), Fabaceae (1), Euphorbiaceae (2), Iridaceae (2), Dracaenaceae (1), Cupressaceae (1), Aracaceae (4), Araceae (7), Amaranthaceae (2), Aizoaceae (1), Apocynaceae (3), Annonaceae (1), Acanthaceae (2), Araliaceae (1), Cactaceae (2), Asparagaceae (1), Lasiosphaciaceae (1), Primulaceae (1), Cucurbitaceae (1).
2.	Dr. Okon's Garden, R'ahwol-Kanang, Bukuru	75	Lobeliaceae (1), Lythraceae (1), Marantaceae (3), Moraceae (2), Malvaceae (1), Myrtaceae (1), Nephrolepidaceae (2), Nyctaginaceae (1), Oleaceae (1), Palmaceae (1), Pinaceae (2), Piperaceae (1), Poaceae (1), Polypodiaceae (2), Vitaceae (1), Strelitziaceae (1), Portulaceae (1), Araceae (15), Arecaceae (1), Solanaceae (1), Crassulaceae (2), Dracaenaceae (1), Cupressaceae (1), Convolvulaceae (1), Cactaceae (3), Astromeriaceae (1), Casuarinaceae (2), Liliaceae (5), Heliconiaceae (1), Hydrangeaceae (1), Gesneriaceae (1), Iridaceae (3), Annonaceae (1), Asteraceae (4), Pasifloraceae (1), Scrophulariaceae (1), Musaceae (1), Rubiaceae (1), Urticaceae (1), Apocynaceae (1), Rosaceae (1), Zingiberaceae (1).
3.	Greenary Garden, Yelwa	48	Araceae (5), Arecaceae (5), Amaranthaceae (2), Aizoaceae (1), Apocynaceae (3), Polypodiaceae (1), Verbanaceae (3), Euphorbiaceae (4), Moraceae (2), Fabaceae (2), Rosaceae (1), Acanthaceae (4), Solanaceae (1), Vitaceae (2), Palmaceae (1), Malvaceae (1), Annonaceae (1), Araliaceae (1), Cactaceae (2), Casuarinaceae (1), Rubiaceae (1), Hydrangeaceae (1), Liliaceae (1), Ericaceae (1), Cococeae (1).
4.	Solomon Lar Amusement Park, Jos	39	Euphorbiaceae (4), Acanthaceae (2), Agavaceae (3), Aizoaceae (1), Amaranthaceae (3), Annonaceae (1), Araceae (3), Aracaceae (3), Balsaminaceae (1), Asclepiadaceae (1), Aspleniaceae (1), Begoniaceae (4), Verbanaceae (4), Cataceae (5), Moraceae (2), Bignoniacae (1)

5.	Government House Rayfield, Jos	24	Balsaminaceae (1), Aracaceae (4), Araliaceae (1), Araucariaceae (1), Buxaceae (1), Celastraceae (1), Gesneriaceae (1), Lauraceae (1), Lythraceae (1), Lobeliaceae (1), Moraceae(1), (1), Malvaceae (1), Myrtaceae (1), Verbanaceae (4), Nephrolepidaceae (1), Pinaceae (1), Cactaceae (1)
6.	Plateau State Ministry of Agriculture and Natural (1), Resources, Vom	38	Aizoaceae (2), Amaranthaceae (3), Annonaceae (1), Apocynaceae (3), Araceae (2), Arecaceae (2), Araucariaceae (1), Asteraceae (4), Verbanaceae (6), Fabaceae (1), Moraceae (2), Strelitziaceae (1) Convolvulaceae (1), Begoniaceae (2), Dracaenaceae (1), Euphorbiaceae (3), Heliconiaceae(1), Iridaceae (1), Cactaceae (1)
7.	National Veterinary Research Institute, Environmental Unit, Vom	63	Vitaceae (1), Verbanaceae (2), Urticaceae (2), Scrophulariaceae (1), Astromeriaceae (1), Solanaceae (3), Sapindaceae (1), Euphorbiaceae (7), Ruscaceae (3), Rosaceae (1), Ranunculaceae (1), Pteridaceae (1), Portulacaceae (1), Piperaceae (1), Polypodiaceae (1), Palmaceae (1), Oleaceae (1), Nyctaginaceae (2), Nephrolepidaceae (2), Araceae (9), Arecaceae (1), Moraceae (2), Malvaceae (1), Maranthaceae (4), Lythraceae (1), Euphorbiaceae (4), Fabaceae (4), Cypressaceae (2), Convolvulaceae (1), Rosaceae (1)
8.	Federal College of Land Resources, Kuru	29	Arecaceae (5), Verbanaceae (4), Areliaceae (2), Begoniaceae (2), Euphorbiaceae (3), Fabaceae (2), Cactaceae (3), Arecaceae (2), Aspleniaceae (1), Polypodiaceae (2), Cycadaceae (1), Lauraceae (1), Araceae (1)

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\* Number in parenthesis indicates the total number of species identified in each family.

Table 3: Species distribution based on origin

Source	No of Plants		Percentage Distribution	
	Jos-North	Jos-South	Jos-North	Jos-South
Indigenous	59	29	35	17
Exotic	112	137	65	83
Total	171	166	100	100

Table 4: Species distribution based on mode of propagation

Source	No. of Plants	Percentage Distribution
Vegetative	171	77
Sexual	51	23
Total	222	100

Table 5: Species distribution based on growth habit

Growth Habit	No. of Plants	Percentage Distribution
Annual	18	8
Biennial	7	3
Perennial	197	89
Total	222	100

Table 6: Species distribution based on economic value

Economic Value (₦)	No. of Plants	Percentage Distribution
1	97	44
2	80	36
3	34	15
4	5	2
5	4	2
6	2	1
Total	222	100

KEY: 1 = ₦100–₦500; 2 = ₦501–₦1,000; 3 = ₦1,001–₦5,000; 4 = ₦5,001–₦10,000;  
 5 = ₦10,001–₦20,000; 6 = ₦20,001 and above

Table 7: Species distribution based on aesthetic value

<u>Aesthetic Value</u>	<u>No. of Plants</u>	<u>Percentage Distribution</u>
Lawn	1	0.5
Indoor plants	49	22
Outdoor plants	67	30
Avenue plants	13	6
Parks and Gardens	68	31
<u>Shade trees</u>	<u>24</u>	<u>11</u>
<u>Total</u>	<u>222</u>	<u>100</u>

Table 8: Cost of maintenance of the species surveyed

<u>Cost of maintenance</u>	<u>No. of Plants</u>	<u>Percentage Distribution</u>
Low	59	27
Moderate	148	67
High	15	7
<u>Total</u>	<u>222</u>	<u>100</u>

Table 9: A Summary of ornamental plants cultivated in some gardens in and around Jos, Nigeria

S/N	Scientific Name	Family	Common name	Source	Mode of Propagation	Growth Habit	Economic value*	Aesthetic Value	Cost of Maintenance
1	<i>Acalypha ciliata</i> Forssk.	Euphorbiaceae	Acalypha	Indigenous	Vegetative	Perennial	2	Avenue	Moderate
2	<i>Acalypha pendula</i> mini red C.Wright ex Griseb.	Euphorbiaceae	Mini Acalypha	Indigenous	Vegetative	Perennial	2	Avenue	Moderate
3	<i>Acalypha torta</i> (Muell)	Euphorbiaceae	Acalypha	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
4	<i>Acalypha wilkesiana</i> Mull.Arg.	Euphorbiaceae	Copper leaf	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
5	<i>Achimenes hybrida</i> Pers.	Gesneriaceae	Cupid's bow	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
6	<i>Adenium obesum</i> (Forssk.) Roem. & Schult.	Apocynaceae	Desert rose Rose	Exotic	Vegetative	Perennial	1	Indoor plant	Moderate
7	<i>Adiantum hispidulum</i> Sw.	Pteridaceae	Maiden hair	Exotic	Vegetative	Perennial	1	Parks & gardens	Low
8	<i>Aeonium tabulaeforme</i> Webb & Berthel.	Crassulaceae	Saucer Plant Century	Exotic	Vegetative	Perennial	1	Indoor plant	Moderate
9	<i>Agave americana</i> L.	Asparagaceae	Plant	Indigenous	Vegetative	Perennial	2	Outdoor plant	Low
10	<i>Ageratum houstonianum</i> Mill.	Asteraceae	Ageratum	Exotic	Vegetative	Annual	1	Plant Garden	Low
11	<i>Aglaonema crispum</i> (Pitcher & Manda) Nicolson	Araceae	Silver Queen	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
12	<i>Aglaonema commutatum</i> Ex. <i>Pseudobracteatum</i>	Araceae	Golden evergreen	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate

13	<i>Aglaonema modestum</i> Schott ex Engl.	Araceae	Chinese evergreen	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
14	<i>Aglaonema treubii</i> Engl.	Araceae	Silver Spear	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
15	<i>Allamanda cathartica</i> L.	Apocynaceae	Allamanda	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
16	<i>Aloe barbadensis</i> Mill.	Asphodelaceae	Barbados aloes	Indigenous	Vegetative	Perennial	1	Indoor plant	Low
17	<i>Aloe variegata</i> Forssk.	Asphodelaceae	Partridge Breast	Indigenous	Vegetative	Perennial	1	Indoor plant	Low
18	<i>Aloe vera</i> (L.) Burm.f.	Asphodelaceae	Aloe vera	Indigenous	Vegetative	Perennial	1	Indoor plant	Low
19	<i>Alpinia argentea</i> (B.L.Burt & R.M.Sm.) R.M.Sm.	Zingiberaceae	Ginger lily	Exotic	Sexual	Perennial	2	Outdoor plant	Moderate
20	<i>Alternanthera bettzickiana</i> (Regel) G.Nicholson	Amaranthaceae	Station master	Indigenous	Vegetative	Perennial	1	Avenue	Low
21	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Ivory pineapple	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
22	<i>Ananas sativus</i> Schult. & Schult.f.	Bromeliaceae	common pineapple	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
23	<i>Antirrhinum majus</i> L.	Plantaginaceae	Snap dragon	Exotic	Vegetative	Annual	1	Parks & gardens	Low
24	<i>Anthurium andraeanum</i> Linden ex Andre	Araceae	Painter's pallete	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
25	<i>Anthurium angamarcaicum</i> Sodiro	Araceae	Arum lily	Exotic	Sexual	Perennial	2	Parks & gardens	Moderate

26	<i>Anthurium scherzerianum</i> Schott	Araceae	Flamingo flower	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
27	<i>Aphelandra squarrosa</i> Nees	Acanthaceae	Zebra Plant	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
28	<i>Aporynaceae adenium</i>	Apocynaceae	Gebias	Exotic	Vegetative	Annual	2	Parks & gardens	Moderate
29	<i>Araucaria heterophyllum</i> (Salisb.) Franco	Araucariaceae	Norfolk Island Palm	Exotic	Sexual	Perennial	6	Outdoor plant	High
30	<i>Archontophoenix unninghamiana</i> (H.Wendl.) H.Wendl. & Drude	Aracaceae	King's palm	Exotic	sexual	Perennial	2	Outdoor plants	Moderate
31	<i>Asparagus plumosus</i> Baker	Asparagaceae	Asparagus fern	Exotic	Sexual	Perennial	2	Outdoor plant	Low
32	<i>Aspidistra elatior</i> Blume	Ruscaceae	Cast iron plant	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
33	<i>Asplenium nidus</i> L.	Aspleniaceae	Bird's Nest fern	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
34	<i>Alstroemeria psittacina</i> Lehm.	Astromeriaceae	Tiger lily	Exotic	vegetative	Perennial	3	Parks & gardens	Moderate
35	<i>Athyrium filix-femina</i> (L.) Roth	Polypodiaceae	Ant fern	Indigenous	Vegetative	Perennial	1	Outdoor plant	Low
36	<i>Begonia coccinea</i> Hook.	Begoniaceae	Angel wing begonia	Exotic	Vegetative	Biennial	1	Indoor plants	Moderate
37	<i>Begonia haageana</i> S.Watson	Begoniaceae	Elephant ear begonia	Exotic	Vegetative	Biennial	1	Indoor plant	Moderate
38	<i>Begonia metallica</i> W.G.Sm.	Begoniaceae	metal leaf begonia	Exotic	Vegetative	Biennial	1	Indoor plant	Moderate
39	<i>Begonia rex</i> Putz.	Begoniaceae	Her Majesty	Exotic	Vegetative	Biennial	1	Indoor plant	Moderate

40	<i>Billbergia nutans</i> H.Wendl.	Bromeliaceae	Queen's tears	Indigenous	vegetative	Perennial	1	Outdoor plants	Moderate
41	<i>Bougainvillea glabra</i> Choisy	Nyctaginaceae	Paper flower	Indigenous	Vegetative	Perennial	1	Avenue plant	Low
42	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	Vera Deep Purple	Exotic Vegetative	Vegetative	Perennial	3	Outdoor plant	Moderate
43	<i>Brasiliopuntia brasiliensis</i> (Willd.) A Berger	Cactaceae	Indoor cactus	Indigenous	Vegetative	Perennial	1	Indoor plant	Low
44	<i>Bryophyllum pinnatum</i> (Lam.) Oken.	Crassulaceae	Bryophyllum	Indigenous	Vegetative	Perennial	1	Indoor plant	Low
45	<i>Bursera microphylla</i> Gray	Burseraceae	Elephant tree	Exotic	Sexual	Perennial	2	Shade tree	High
46	<i>Buxus sempervirens</i> L.	Buxaceae	Box	Exotic	Vegetative	Perennial	1	outdoor plant	Moderate
47	<i>Caesalpinia pulcherrima</i> (L.) Sw.	Fabaceae	Caesalpinia	Exotic	Vegetative	Perennial	1	Shade tree	Moderate
48	<i>Caladium hortulanum</i> Bridsey	Araceae	Jesus blood	Exotic	Vegetative	Perennial	2	Indoor plants	Moderate
49	<i>Calathea makoyana</i> E.Morren	Marantaceae	Peacock plant	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
50	<i>Calathea zebrina</i> (Sims) Lindl.	Marantaceae	Zebra Plant	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
51	<i>Calendula officinalis</i> L.	Asteraceae	Pot marigold	Exotic	Sexual	Annual	2	outdoor plant	Moderate
52	<i>Callistemon citrinus</i> (Curtis) Skeels	Myrtaceae	Bottle brush	Indigenous	Sexual	Perennial	2	Shade tree	Moderate

53	<i>Calluna vulgaris</i> (L.) Hull.	Lythraceae	Heathers	Indigenous	Sexual	Annual	1	Outdoor plant	Low
54	<i>Carex morrowii variegated</i> Boott	Cyperaceae	Japanese sedge	Exotic	Vegetative	Perennial	2	Outdoor plants	Moderate
55	<i>Carex siderosticta</i> Hance	Cyperaceae	Carex	Exotic	Vegetative	Perennial	2	Outdoor (climber)	Moderate
56	<i>Caryota mitis</i> Lour.	Arecaceae	Fish palm	Exotic	Sexual	Perennial	1	outdoor plant	Moderate
57	<i>Cassia biflora</i> Mill.	Fabaceae	Cassia	Indigenous	Vegetative	Perennial	1	Shade tree	Moderate
58	<i>Cassia fistula</i> L.	Fabaceae	Golden shower	Indigenous	Vegetative	Perennial	2	Indoor plant	Moderate
59	<i>Casuarina equisetifolia</i> L.	Casuarinaceae	Christmas tree	Indigenous	Vegetative	Perennial	5	Shade tree	Moderate
60	<i>Celosia cristata</i> L.	Amaranthaceae	Corkscomb	Exotic	sexual	Perennial	2	Parks & gardens	Moderate
61	<i>Cercophora palmiola</i> Fuckel	Lasiosphaeriaceae	Triangularia	Indigenous	Vegetative	Perennial	1	Parks & gardens	Low
62	<i>Cereus peruvianus</i> (L.) Mill.	Cactaceae	Column Cactus	Indigenous	Vegetative	Perennial	2	Indoor plants	Low
63	<i>Ceropegia woodii</i> Schltr.	Apocynaceae	Cactus	Indigenous	Vegetative	Perennial	1	Outdoor plant	Low
64	<i>Chamaedorea seifrizii</i> Burret	Arecaceae	Reed palm	Exotic	Sexual	Perennial	2	Parks & gardens	Moderate
65	<i>Chamaedorea elegans</i> Mart.	Arecaceae	Parlour palm	Exotic	Sexual	Perennial	2	Parks & gardens	Moderate
66	<i>Chlorophytum comosum variegatum</i> (Thunb.) Jacques	Agavaceae	spider plant	Exotic	Vegetative	Perennial	1	Indoor plant	Moderate

67	<i>Chrysanthemum frutescens</i> L.	Asteraceae	Chrysanthemum	Exotic	Vegetative	Perennial	3	Parks & gardens	Moderate
68	<i>Chrysanthemum morifolium</i> (Ramat.) Hemsl.	Asteraceae	Chrysanthes-	Exotic	Vegetative	Perennial	3	Parks & gardens	Moderate
69	<i>Cissus antarctica</i> Vent.	Vitaceae	Kangaroo vine	Exotic	Vegetative	Perennial	3	Parks & gardens	Moderate
70	<i>Codiaeum variegatum</i> (L.) Rumph. ex A.Juss.	Euphorbiaceae	Croton	Indigenous	Vegetative	Perennial	1	Avenue	Moderate
71	<i>Codiaeum variegatum</i> (L.) Rumph. ex A.Juss.	Euphorbiaceae	Croton	Indigenous	Vegetative	Perennial	1	Outdoor plant	High
72	<i>Cordyline terminalis tricolor</i> Kunth	Agavaceae	Cordyline	Exotic	Vegetative	Perennial	3	Indoor plant	Moderate
73	<i>Coffea arabica</i> L.	Rubiaceae	Coffee plant	Exotic	Sexual	Perennial	6	Shade tree	Moderate
74	<i>Coleus blumei</i> Benth.	Lamiaceae	Flame Nettle	Exotic	Vegetative	Perennial	1	Indoor plant	Moderate
75	<i>Colocasia esculenta</i> (L.) Schott	Araceae	Cocoyam flower	Indigenous	Vegetative	Perennial	1	Parks & gardens	Low
76	<i>Consolida ajacis</i> (L.) Schur	Ranunculaceae	Delphinia	Exotic	Sexual	Annual	3	Parks & gardens	Low
77	<i>Cordyline australis</i> (G.Frost.) Endl.	Agavaceae	Grass palm	Exotic	Vegetative	Perennial	3	Outdoor plants	Moderate
78	<i>Crassula muscosa</i> L.	Crassulaceae	Rat tail plant	Indigenous	Vegetative	Perennial	3	Parks & gardens	Moderate
79	<i>Cryptanthus acaulis</i> (Lindley) Beer	Bromeliaceae		Exotic	Sexual	Perennial	3	Indoor plants	Moderate

80	<i>Cycas revoluta</i> Thunb.	Cycadaceae	Sago palm	Exotic	Sexual	Perennial	4	Outdoor plant	High
81	<i>Cyclamen hederifolium</i> Aiton	Primulaceae	Jerry coil	Indigenous	Sexual	Perennial	2	Indoor plant	Moderate
82	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Carpet grass	Indigenous	Sexual	Biennial	2	Lawn	High
83	<i>Cytomium falcatum</i> (L.f.) C.Presl	Dryopteridaceae	Holy fern	Exotic	Sexual	Perennial	3	Outdoor plant	Moderate
84	<i>Thymophylla tenuiloba</i> (DC.) Small	Asteraceae	Daisy	Exotic	Vegetative	Biennial	1	Indoor plant	Moderate
85	<i>Dahlia hybrida</i> Cav.	Asteraceae	Dahlia	Exotic	Sexual	Annual	1	Parks & gardens	Moderate
86	<i>Datura arborea</i> L.	Solanaceae	Datura	Indigenous	Vegetative	Perennial	2	Shade tree	Moderate
87	<i>Delonix regia</i> (Boj. ex Hook.) Raf.	Fabaceae	Flambouyant tree	Indigenous	Vegetative	Perennial	3	Shade tree	Moderate
88	<i>Delphinium consolida</i> L.	Ranunculaceae	Blue bee	Exotic	Vegetative	Perennial	3	Parks & garden	Moderate
89	<i>Dieffenbachia oerstedii</i> Schott	Araceae	Leopard lily	Exotic	Vegetative	Perennial	3	Indoor plant	Moderate
90	<i>Dieffenbachia picta</i> (Lodd.) Schott.	Araceae	Leopard lily	Exotic	Vegetative	Perennial	3	Indoor plant	Moderate
91	<i>Dimocarpus longina</i> Lour.	Sapindaceae	Snakeskin	Indigenous	Vegetative	Perennial	2	Outdoor plant	Low
92	<i>Dodonaea viscosa</i> Jacq.	Sapindaceae	Jos private	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
93	<i>Dracaena deremensis</i> Warneckii	Asparagaceae	Janet craig	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate

94	<i>Dracaena fragrans</i> (L.) Ker Gwal. var. <i>lindelii</i>	Dracaenaceae	Corn flower	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
95	Dracaenaceae <i>fragrans</i>	Dracaenaceae	Corn flower Goldust	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
96	<i>Dracaena surculosa</i> Lindl.	Asparagaceae	Dracaena	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
97	<i>Dracena draco</i> (L.) Lindl.	Asparagaceae	Dragon tree	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
98	<i>Duranta erecta</i> (L.)	Verbenaceae	Variegated duranta	Indigenous	Vegetative	Perennial	1	Avenue plant	Low
99	<i>Duranta repens</i> (L.)	Verbenaceae	Yellow bush	Indigenous	Vegetative	Perennial	1	Avenue plant	Low
100	<i>Dypsis baronii</i> (Becc.) Beentje & J.Dransf.	Arecaceae	Golden palm	Exotic	Sexual	Perennial	2	Outdoor plants	Moderate
101	<i>Dypsis lutescens</i> (H.Wendl.) Beentje & J.Dransf.	Aracaceae	Golden palm	Exotic	Sexual	Perennial	3	Outdoor plant	Low
102	<i>Echeveria derenbergii</i> J.A.Purpus	Crassulaceae	Painted lady	Exotic	Vegetative	Perennial	3	Indoor plant	Moderate
103	<i>Erythrina livingstonia</i> Baker	Fabaceae	Livingstonia	Exotic	Vegetative	Perennial	2	Outdoor plant	Moderate
104	<i>Euonymus alatus</i> (Thunb.) Siebold	Celastraceae	Eunymous	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
105	<i>Euphorbia cotinifolia</i> L.	Euphorbiaceae	Euphorbia	Exotic	Vegetative	Perennial	1	Parks & gardens	Moderate
106	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Euphorbia	Exotic	Vegetative	Perennial	1	Parks & gardens	Moderate
107	<i>Euphorbia milii</i> Des Moul.	Euphorbiaceae	Euphorbia	Indigenous	Vegetative	Perennial	4	Shade tree	Moderate
108	<i>Euphorbia tithymaloides</i> L.	Euphorbiaceae	Euphorbia	Indigenous	Vegetative	Perennial	1	Parks & gardens	Moderate

109	<i>Fatsia japonica</i> (Thunb.) Decne. & Planch.	Araliaceae	Castor oil Plant	Exotic	Sexual	Perennial	2	Indoor plant	Moderate
110	<i>Ficus benjamina</i> L.	Moraceae	Weeping fig	Exotic	Vegetative	Perennial	1	Avenue plant	High
111	<i>Ficus carica</i> L.	Moraceae	Fig fruit	Indigenous	Vegetative	Perennial	1	Outdoor plant	Low
112	<i>Ficus elastica</i> Roxb. Ex Hornem var Tricolor	Moraceae	Ficus	Exotic	Vegetative	Perennial	1	Avenue plant	High
113	<i>Ficus repens</i>	Moraceae	Creeping fig	Exotic	Vegetative	Perennial	1	Outdoor climber	High
114	<i>Fittonia argyroneura</i> Coem.	Acanthaceae	Silver net leaf	Exotic	Vegetative	Perennial	1	Indoor plant	Moderate
115	<i>Fittonia gigantea</i> Linden	Acanthaceae	Snakes in plants	Exotic	Vegetative	Perennial	1	Indoor plant	Moderate
116	<i>Gardenia jasminoides</i> J.Ellis	Rubiaceae	Gardenia	Exotic	Vegetative	Perennial	1	Parks & gardens	Low
117	<i>Gladiolus callianthus</i> Marais	Iridaceae	Gladiolus	Exotic	Vegetative	Annual	3	Parks & garden	Low
118	<i>Gloriosa rothschildiana</i> O'Brien	Liliaceae	Glory lily	Exotic	Vegetative	Perennial	3	Parks & gardens	Moderate
119	<i>Guzmania lingulata</i> (L.) Mez	Bromeliaceae	Guzmania	Exotic	Vegetative	Perennial	3	Parks & gardens	Moderate
120	<i>Gynura sarmentosa</i> (Blume) DC.	Asteraceae	Purple Passion vine	Exotic	Vegetative	Perennial	3	Parks & gardens	Moderate
121	<i>Hedera helix</i> (L.)	Araliaceae	Ivy	Exotic	Sexual	Perennial	2	Outdoor (climber)	Moderate
122	<i>Helianthus annus</i> (L.)	Asteraceae	Helianthus	Indigenous	Vegetative	Perennial	1	Parks & gardens	Moderate
123	<i>Heliconia rostrata</i> Ruiz & Pavon	Heliconiaceae	Heliconia	Exotic	Sexual	Perennial	1	Parks & gardens	Moderate
124	<i>Helxine soleirolii</i> Req.	Urticaceae	Baby tears	Indigenous	Vegetative	Annual	1	Outdoor plant	Moderate
125	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Rose of	Exotic	Vegetative	Perennial	1	Parks & gardens	Moderate

126	<i>Hippeastrum hybrideum</i> Hort.	Liliaceae	Hippeastrum Passum	Indigenous	Vegetative	Perennial	1	Parks & gardens	Moderate
127	<i>Hura crepitans</i> L.	Euphorbiaceae	wood	Exotic	sexual	Perennial	4	Shade tree	Moderate
128	<i>Hydrangea macrophylla</i> (Thunb) Ser.	Hydrangeaceae	Hydrangea Buzy	Exotic	Sexual	Perennial	2	Parks & gardens	Moderate
129	<i>Impatiens walleriana</i> Hook.f.	Balsaminaceae	lizzie/patient lucy	Exotic	Sexual	Perennial	2	Parks & gardens	Moderate
130	<i>Ipomoea tricolor</i> Cav.	Convolvulaceae	Morning glory	Exotic	Sexual	Annual	2	Parks & gardens	Moderate
131	<i>Iresine herbstii</i> Hook.	Amaranthaceae	Blood leaf	Exotic	Vegetative	Perennial	1	Outdoor plant	Moderate
132	<i>Iris reticulata</i> M.Bieb.	Iridaceae	bulb leaf	Exotic	Vegetative	Annual	2	Parks & gardens	Low
133	<i>Iris squalens</i> L.	Iridaceae	Variegatediris Flame of	Indigenous	Vegetative	Perennial	1	Parks & gardens	Low
134	<i>Ixora coccinea</i> L.	Rubiaceae	woods	Exotic	Vegetative	Annual	2	Parks & gardens	Low
135	<i>Jacaranda mimosifolia</i> D.Don	Bignoniaceae	Jacaranda	Indigenous	Vegetative	Perennial	1	Shade tree	Moderate
136	<i>Jacobinia carnea</i> Moric.	Acanthaceae	King's crown	Exotic	Vegetative	Perennial	1	Outdoor	Low
137	<i>Jasminum primulinum</i> Hemsl. ex Baker	Oleaceae	Jasmine	Exotic	Vegetative	Perennial	2	Shade tree	Low
138	<i>Jatropha multifida</i> L.	Euphorbiaceae	Jatropha	Exotic	Vegetative	Perennial	1	Outdoor plant	Low

139	<i>Lagerstroemia indica</i> L.	Lythraceae	Crape myrtle	Exotic	Vegetative	Perennial	1	Outdoor plant	Low
140	<i>Lantana camara</i> L.	Verbenaceae	Lantana	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
141	<i>Lagerstroemia speciosa</i> (L.) Pers.	Lythraceae	Queen of Phillipi	Exotic	Vegetative	Perennial	1	Parks & gardens	Moderate
142	<i>Laurus nobilis</i> (L.)	Lauraceae	Laurel (Bay tree)	Exotic	Vegetative	Perennial	5	Shade tree	Moderate
143	<i>Lemaireocereus marginatus</i> (DC.) A.Berger	Cactaceae	Cactus	Exotic	Vegetative	Perennial	2	Indoor plant	Low
144	<i>Lilium longiflorum</i> Thunb.	Liliaceae	Easter Lily	Exotic	Vegetative	Perennial	3	Indoor plant	Moderate
145	<i>Livistonia chinensis</i> (Jacq.) R.Br. ex Mart.	Palmaceae	Chinese fan palm	Exotic	Sexual	Perennial	3	Outdoor plant	Moderate
146	<i>Lobelia erinus</i> (L.)	Lobeliaceae	Lobelia	Indigenous	Sexual	Annual	1	Parks & gardens	Low
147	<i>Mammillaria elongata</i> DC.	Cactaceae	Brain cactus	Exotic	Sexual	Perennial	1	Outdoor plant	Low
148	<i>Manettia inflate</i> Sprague	Rubiaceae	Fire cracker plant	Exotic	Vegetative	Perennial	2	Outdoor plant (climber)	Low
149	<i>Maranta leuconeura</i> E. Morren var Kerchoveana	Marantaceae	Prayer plant	Exotic	Vegetative	Perennial	2	Parks & gardens	High
150	<i>Maranta makoyana</i> (E.Morren) E.Morren	Marantaceae	Peacock plant	Exotic	Vegetative	Perennial	2	Parks & gardens	High
151	<i>Maranta tricolor</i> Ker Gwal.	Marantaceae	Prayer plant	Exotic	Vegetative	Perennial	2	Parks & gardens	High

152	<i>Mimosa pudica</i> L.	Fabaceae	Touch me not	Indigenous	Vegetative	Annual	1	Outdoor plant	Low
153	<i>Mirabilis jalapa</i> L.	Nyctaginaceae	Four O'clock plant	Indigenous	Vegetative	Annual	1	Parks & gardens	Low
154	<i>Monstera deliciosa</i> Liebm.	Araceae	Swiss cheese plant	Exotic	Vegetative	Perennial	2	Indoor plant	High
155	<i>Musa paradisiaca</i> L.	Musaceae	Musa banana	Indigenous	Vegetative	Perennial	1	Outdoor plant	Low
156	<i>Mussaenda erythrophylla</i> Schumach. & Thonn.	Rubiaceae	Ashanti	Indigenous	Vegetative	Perennial	1	Indoor plant	Moderate
157	<i>Nephrolepsis biserrata</i> (Sw.) Schott	Nephrolepidiaceae	Fern	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
158	<i>Nephrolepsis exaltata</i>	Nephrolepidiaceae	Sword fern	Exotic	Vegetative	Perennial	1	Outdoor plant	Moderate
159	<i>Nephrolepsis exaltata</i> (L.) Schott var Bostoniensis	Nephrolepidiaceae	Boston fern	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
160	<i>Nerium oleanda</i> L.	Apocynaceae	Oleander	Indigenous	Vegetative	Perennial	1	Outdoor plant	Low
161	<i>Nicodemia diversifolia</i> Ten.	Solanaceae	Indoor oak	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
162	<i>Nicotiana affinis</i> T.Moore	Solanaceae	Tobacco plant	Exotic	Sexual	Annual	2	Parks & gardens	Low
163	<i>Opuntia littoralis</i> (Engelm.) Cockerell	Cactaceae	Cactus	Indigenous	Vegetative	Perennial	2	Indoor plant	Low
164	<i>Opuntia lindheimeri</i> Engelm.	Cactaceae	Cactus	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate

165	<i>Opuntia rufida</i> Engelmann	Cactaceae	Cinnamon cactus	Indigenous	Vegetative	Perennial	1	Indoor plant	Low
166	<i>Pachystachys lutea</i> Nees	Acanthaceae	Lollipop	Exotic	vegetative	Perennial	2	Parks & gardens	Moderate
167	<i>Parthenocissus quinquefolia</i> (L.) Planch.	Vitaceae	Rose hybrid	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
168	<i>Passiflora incarnata</i> L.	Passifloraceae	Statis	Exotic	Sexual	Annual	3	Parks & gardens	High
169	<i>Pellionia pulchra</i> N.E.Br.	Urticaceae	Pellionia	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
170	<i>Penniseta setaceum</i> (Forssk.) Chiov.	Poaceae	Southern grass	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
171	<i>Penstemon moriahensis</i> N.H.Holmgren	Scrophulariaceae	Moriah	Exotic	Vegetative	Perennial	1	Shade tree	Moderate
172	<i>Pereskia grandifolia</i> Pfeiff.	Cactaceae	Rose cactus	Exotic	Vegetative	Perennial	1	Outdoor plant	Low
173	<i>Petasites palmatus</i> (Aiton.) Gray	Aracaceae	Golden palm	Exotic	Sexual	Perennial	4	Outdoor plant	Moderate
			Creeping					Outdoor	
174	<i>Peperomia rotundifolia</i> (L.) C. Linne.	Piperaceae	perperomia	Exotic	Vegetative	Perennial	3	(Climber)	Moderate
175	<i>Philodendron bipinnatifidum</i> Schott ex Endl.	Araceae	Tree philodendron	Exotic	Vegetative	Perennial	3	Shade tree	Moderate
176	<i>Philodendron hastatum</i> K. Koch & Sello	Araceae	Elephant ear	Exotic	Vegetative	Perennial	3	Indoor plants	Moderate

177	<i>Phoenix dactylifera</i> L.	Aracaceae	Crown of palm	Indigenous	Vegetative	Perennial	1	Parks & gardens	Low
178	<i>Phyllanthus nivosus</i> W.Bull	Aizoaceae	Ice plant	Indigenous	Vegetative	Biennial	1	Avenue plant	Low
179	<i>Pilea depressa</i> (Sw.) Blume	Urticaceae	Creeping Jenny	Exotic	Vegetative	Perennial	1	(Trailing) Outdoor plant	Low
180	<i>Pinus caribaea</i> Morelet	Pinaceae	Caribbean pine	Exotic	Sexual	Perennial	3	Shade tree	Low
181	<i>Pinus contorta</i> Douglas	Pinaceae	Conifer	Indigenous	Sexual	Perennial	3	Shade tree	Low
182	<i>Plumeria rubra</i> L.	Apocynaceae	Frangipany	Indigenous		Perennial	1	Outdoor plant	Low
183	<i>Polyalthia longifolia</i> (Sonn.) Thwaites	Annonaceae	Masquerade plant	Exotic		Perennial	1	Avenue plant	High
184	<i>Polyscias fruiticosa</i> (L.) Harms	Araliaceae	Ming Aralia	Exotic		Perennial	3	Shade tree	Moderate
185	<i>Portulaca oleracea</i> L.	Portulacaceae	Africa never die	Indigenous	Vegetative	Perennial	1	Outdoor plant	Low
186	<i>Pteris tremula</i> R.Br.	Pteridaceae	Trembling fern	Exotic	Sexual	Perennial	1	Outdoor plant	Low
187	<i>Ravenala madagascariensis</i> Sonn.	Strelitziaceae	Traveler's palm	Exotic	Sexual	Perennial	3	Outdoor plant	Moderate
188	<i>Rhipsalis paradoxa</i> (Salm-Dyck ex Pfeiffer) Salm-Dyck	Cactaceae	Chain cactus	Exotic	Vegetative	Perennial	1	Outdoor cacti	Low

189	<i>Rosa arvensis</i> Huds	Rosaceae	Pocelain Rose	Exotic	Sexual	Perennial	1	Outdoor plant	Low
190	<i>Rosa chinensis</i> Jaqc. var <i>Minima</i>	Rosaceae	Miniature Rose	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
191	<i>Roystonea regia</i> (Kunth) O.F.Cook	Arecaceae	Royal palm	Exotic	Sexual	Perennial	2	Outdoor plant	Moderate
192	<i>Saintpaulia ionantha</i> H.Wendl.	Gesneriaceae	African violet	Exotic	Vegetative	Perennial	2	Parks & gardens	Moderate
193	<i>Salvia splendens</i> Sellow ex J.A. Schultes	Lamiaceae	Salvia	Exotic	Sexual	Annual	1	Parks & gardens	Moderate
194	<i>Sansevieria trifasciata</i> Prain. var <i>Hahnii</i>	Asparagaceae	Golden bird's nest	Indigenous	Vegetative	Perennial	3	Outdoor plant	Moderate
195	<i>Sansevieria trifasciata</i> Prain.	Asparagaceae	Mother inlaw tongue	Indigenous	Vegetative	Perennial	3	Outdoor plant	Moderate
196	<i>Schefflera actinophylla</i> (Endl.) Harms	Apiaceae	Umbrella tree	Indigenous	Vegetative	Perennial	2	Shade tree	Moderate
197	<i>Sciadopitys verticillata</i> (Thunb.) Siebold & Zucc.	Podocarpaceae	Umbrella pine	Exotic	Vegetative	Perennial	2	Outdoor plant	Moderate
198	<i>Scindapsus aureus</i> (Linden & Andre) Engl.	Araceae	Marble Queen	Exotic	Vegetative	Perennial	1	Outdoor plant	Moderate
199	<i>Selenicereus grandiflorus</i> (L.) Britton & Rose	Cactaceae	Queen of the night	Indigenous	Vegetative	Perennial	1	Outdoor plant	Low
200	<i>Sempervivum tectorum</i> L.	Cactaceae	Hens and Chickens	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
201	<i>Sohdago virgaurea</i> L.	Asteraceae	Golden rod	Indigenous	Vegetative	Perennial	1	Parks & gardens	Low

202	<i>Spathiphyllum wallisii</i> Regel plants Moderate	Araceae	Peace lily	Exotic	Vegetative	Perennial	2	Outdoor plant	Low
203	<i>Spathodea campanulata</i> P.Beauv. Tree Moderate	Bignoniaceae	African tulip	Indigenous	Sexual	Perennial	4	Shade tree	Low
204	<i>Stenolobium stans</i> (L.) Seem.	Bignoniaceae	Yellow trumpet bush	Indigenous	Sexual	Perennial	5	Shade tree	Moderate
205	<i>Strelitzia reginae</i> Banks	Strelitziaceae	Bird of paradise	Exotic	Vegetative	Perennial	3	Parks & gardens	Moderate
206	<i>Stromanthe amabilis</i> E.Morren	Marantaceae	Stromanthe	Exotic	Vegetative	Perennial	2	Indoor plants	Moderate
207	<i>Syagrus romanzoffiana</i> (Cham.) Glassman	Arecaceae	Queen's palm	Exotic	Sexual	Perennial	2	Outdoor plants	Moderate
208	<i>Syngonium podophyllum</i> Schott	Araceae	Goose foot plant	Exotic	Vegetative	Perennial	2	Indoor plant	Moderate
209	<i>Tagetes patula</i> L.	Asteraceae	French marigold	Exotic	Sexual	Annual	1	Outdoor plant	Moderate
210	<i>Terminalia catappa</i> L.	Combretaceae	Terminalia	Indigenous	Vegetative	Perennial	1	Shade tree	Moderate
211	<i>Tetrastigma voinierianum</i> (Sallier) Pierre ex Gagnep.	Vitaceae	Chestnut vine	Exotic	Vegetative	Perennial	2	Outdoor plant (climber)	Moderate
212	<i>Thevetia peruviana</i> (Pers.) K.Schum.	Apocynaceae	Yellow oleander	Indigenous	Vegetative	Perennial	1	Shade tree	Low
213	<i>Thuja plicata</i> Donn.ex D.Don	Cupressaceae	Christmas tree	Exotic	Vegetative	Perennial	5	Avenue	High
214	<i>Tradescantia fluminensis</i> Vell.	Commelinaceae	Inch plant	Exotic	Vegetative	Perennial	2	Outdoor plant	Moderate
215	<i>Vallota speciosa</i> (L.f.) T.Durand	Amaryllidaceae	Scarborough lily	Exotic	Vegetative	Perennial	1	Parks & gardens	Moderate

216	<i>Verbena hybrida</i> Voss	Verbenaceae	Verbena	Indigenous	Sexual	Perennial	1	Parks & gardens	Moderate
217	<i>Vriesia splendens</i> (Brongn.) Lem.	Bromeliaceae	Flaming sword	Exotic	Vegetative	Perennial	1	Outdoor plant	Low
218	<i>Xerophyllum tenax</i> (Pursh) Nutt.	Poaceae	Fillers	Exotic	Sexual	Perennial	2	Parks & gardens	Moderate
219	<i>Yucca gigantea</i> Lem.	Asparagaceae	Spineless yucca	Indigenous	Vegetative	Perennial	1	Outdoor plant	Moderate
220	<i>Zantedeschia aethiopica</i> (L.) Spreng.	Araceae	Arum lily	Exotic	Sexual	Perennial	1	Parks & gardens	Moderate
221	<i>Zantedeschia elliotiana</i> (L.) Spreng.	Araceae	Bridal lily	Exotic	Sexual	Perennial	1	Parks & gardens	Moderate
222	<i>Zebrina pendula</i> Schnizl.	Commelinaceae	Inch plant	Exotic	Vegetative	Perennial	1	Indoor plant	Moderate

KEY: 1 = ₦100–₦500; 2 = ₦501–₦1,000; 3 = ₦1,001–₦5,000; 4 = ₦5,001–₦10,000; 5 = ₦10,001–₦20,000; 6 = N20,001 and above

TABLE 10: Summary of families and species distribution of ornamental plants cultivated in some Gardens in and around Jos, Nigeria.

S/N	Family	Frequency	Species
1.	Acanthaceae	5	<i>Aphelandra squarrosa, Fittonia argyroneura, F. gigantea, Jacobinia carnea, Pachystachys lutea</i>
2.	Agavaceae	2	<i>Chlorophytum comosum variegata, Cordyline australis,</i>
3.	Aizoaceae	1	<i>Phyllanthus nivousis</i>
4.	Amaranthaceae	2	<i>Alternanthera bettzickiana, Celosia cristata</i>
5.	Amaryllidaceae	1	<i>Vellata speciosa</i>
6.	Annonaceae	1	<i>Polyalthia longifolia</i>
7.	Apiaceae	1	<i>Shefflera Actinophylla</i>
8.	Apocynaceae	6	<i>Allamanda cathartica, Nerium oleanda, Plumeria rubra, Thevetia peruviana, Adenium obesum, Apocynaceae adenium</i>
9.	Araceae	19	<i>Aglaonema crispum, A. modestum, A. pseudobracteatum, A. treubii, Anthurium andeanum, A. scherzerianum, Caladium hortulanum, Dieffenbachia oerstedii, D. picta, Monstera deliciosa, Scindapsus aureus, Spathiphyllum wallisii, Syngonium podoplyllum, Zantedeschia aethiopica, Philodendron hastatum, P. bipinnatifidum, Anthurium angamarianum, Colocasia esculenta, Zantedeschia elliotinii</i>
10.	Aracaceae	10	<i>Archontophoenix cunninghamiae, Caryota mitis, Chamaedorea elegans, Chamaedorea seifrizii, Roystonea regia, Paradosurus zelonensis, Dypsis lutescens, Phoenix dactylifera, Petasites palmatus, Dypsis palmatus</i>
11.	Araliaceae	2	<i>Fatsia japonica, Polyscias fruticosa,</i>
12.	Araucariceae	1	<i>Araucaria heterophyllum</i>
13.	Asparagaceae	7	<i>Asparagus plumosus, Agave americana, Sansevieria travasiata var. hahnii, Sansevieria travasiata, Yucca gigantean, Dracaena surculosa, Dracaena elraci</i>
14.	Aspleniaceae	1	<i>Asplenium nidus</i>
15.	Asphodelaceae	3	<i>Aloe variegata, Aloe barbadensis, Aloe vera</i>

16.	Asteraceae	9	<i>Ageratum houstonianum, Calendula officinalis, Chrysanthemum morifolium, Gynura sarmentosa, Helianthus annus, Tagetes patula, Dahlia hybrida, Sahdago virgauria, Termophylla tenuiloba</i>
17.	Astromeriaceae	1	<i>Astroemeria psittacina</i>
18.	Balsaminaceae	1	<i>Impatiens wallerana</i>
19.	Begoniaceae	4	<i>Begonia coccinea, B. haageana, B. metallica, B. rex</i>
20.	Bignoniaceae	3	<i>Jacaranda mimosifolia, Spathodea campanulata, Stenolobium stans</i>
21.	Bromeliaceae	4	<i>Ananas comosus, A. sativus, Billbergia nutans, Guzmania lingulata</i>
22.	Burseraceae	1	<i>Bursera microphlla</i>
23.	Buxaceae	1	<i>Buxus sempervirens</i>
24.	Cactaceae	11	<i>Cereus peruvianus, Lemairocereus marginatus, Opuntia lindheimerii, O. littoralis, O. rufida Rhipsalis paradoxa, Sempervivum tectorum, Mammilaria elongata, Brasiliopuntia brasiliensis, Selenicereus grandiflorus, Pereskia grandifolia</i>
25.	Casuarinaceae	1	<i>Casuarina equisetifolia</i>
26.	Celastraceae	1	<i>Eunymous alata</i>
27.	Combretaceae	1	<i>Terminalia catappa</i>
28.	Commelinaceae	2	<i>Tradescantia fluminensis, Zebrina pendula</i>
29.	Convolvulaceae	1	<i>Ipomoea tricolor</i>
30.	Crassulaceae	4	<i>Aconium tabulaeforme, Bryophyllum pinnatum, Crassula muscosa, Echeveria derenbergii.</i>
31.	Cupressaceae	1	<i>Thuja plicata</i>
32.	Cycadaceae	1	<i>Cycas revoluta</i>
33.	Cyperaceae	2	<i>Carex marrowii, C. siderostycha</i>
34.	Dracaenaceae	2	<i>Dracaena fragrans, D. fragrans var. lindelii</i>
35.	Dryopteridaceae	1	<i>Cytomium falcatum</i>
36.	Euphorbiaceae	12	<i>Acalypha torta, A. ciliata, A. wilkesiana, A. pendula, Codiaeum variegatum, Euphorbia cotinifolia, E. milli, E. tithymaloides, E. hirta, Hura crepitans, Jatropha gossipifolia, Codiaeum variegatum</i>
37.	Fabaceae	6	<i>Caesalpinia pulcherrima, Cassia biflora, Delonix regia, Erythrina livingstonia, Mimosa pudica, Cassia fistula.</i>
38.	Gesneriaceae	2	<i>Saintpaulia ionantha, Achimenes hybrida</i>
39.	Heliconiaceae	1	<i>Heliconia rostrata</i>
40.	Hydrangeaceae	1	<i>Hydrangea macrophylla</i>
41.	Iridaceae	3	<i>Gladiolus callianthus, Iris reticulata, I. squalens</i>

42.	Lamiaceae	2	<i>Coleus blumei, Salvia splendens</i>
43.	Lasiosphaeriaceae	1	<i>Cercophora palmicola</i>
44.	Lauraceae	1	<i>Laurus nobilis</i>
45.	Liliaceae	3	<i>Gloriosa rothschildiana, Hippeastrum hybridum, Lilium longiflorum</i>
46.	Lobeliaceae	1	<i>Lobelia erinus</i>
47.	Lythraceae	2	<i>Lagerstroemia indica, Calluna vulgaris</i>
48.	Malvaceae	1	<i>Hibiscus rosa-sinensis</i>
49.	Marantaceae	5	<i>Calathea zebrina, Maranta leuconeura, M. makoyana, M. tricolor, Stromanthe amabilis</i>
50.	Moraceae	4	<i>Ficus benjamina, F. elastica, F. repens, F. carica</i>
51.	Musaceae	1	<i>Musa paradisiaca</i>
52.	Myrtaceae	1	<i>Callistemon citrinus</i>
53.	Nephrolepidaceae	3	<i>Nephrolepsis exaltata, N. exaltata botsoniensis, Nephrolepsis biserrata</i>
54.	Nyctaginaceae	3	<i>Bougainvillea glabra, Mirabilis jalapa, Bougainvillea spectabilis</i>
55.	Oleaceae	1	<i>Jasminum primulinum</i>
56.	Palmaceae	1	<i>Livingstonia chinensis</i>
57.	Passifloraceae	1	<i>Passiflora incarnata</i>
58.	Pinaceae	2	<i>Pinus caribaea, P. contorta</i>
59.	Piperaceae	1	<i>Peperomia rotundifolia</i>
60.	Plantaginaceae	1	<i>Antirrhinum majus</i>
61.	Poaceae	3	<i>Gnodon dactylon, Xerophyllum tenax, Pennisetum setaceum</i>
62.	Podocarpaceae	1	<i>Sciadopitys verticiliata</i>
63.	Polypodiaceae	1	<i>Athyrium filix-femina</i>
64.	Portulacaceae	1	<i>Portulaca oleracea</i>
65.	Primulaceae	1	<i>Cyclamen hederifolium</i>
66.	Pteridaceae	2	<i>Pteris tremula, Adiantum hispidulum</i>
67.	Ranunculaceae	2	<i>Delphinium consolida, Consolida ajacis</i>
68.	Rosaceae	2	<i>Rosa chinensis minima, Rosa arvensis</i>
69.	Rubiaceae	5	<i>Coffea arabica, Gardenia jasminoides, Ixora coccinea, Manettia inflata, Mussaenda erythrophylla</i>
70.	Ruscaceae	1	<i>Aspidistra elatior</i>
71.	Sapindaceae	2	<i>Dodonaea viscosa, Dimocarpus longina</i>
72.	Solanaceae	3	<i>Datura arborea, Nicodemia affinis, N. diversifolia</i>
73.	Scrophulariaceae	1	<i>Penstemon moriahensis</i>

74.	Strelitziaceae	2	<i>Strelitzia reginae, Ravenala madagascariensis</i>
75.	Urticaceae	3	<i>Hexine soleirolii, Pellionia pulchra, Pilea depressa</i>
76.	Verbenaceae	4	<i>Duranta erecta, D. repens, Lantana camara, Verbena hybrida</i>
77.	Vitaceae	3	<i>Cissus antarctica, Parthenocissus quinquefolia, Tetrastigma voinierianum</i>
78.	Zingiberaceae	1	<i>Alpinia argentea</i>

Table 11: Result of species distribution in Jos North and Jos South LGAs based on origin

Origin	No. of Plants	Percentage Distribution
Indigenous	72	32
Exotic	150	68
Total	222	100

Table 12: Analysis of questionnaires based on occupation of respondents

Occupation	Respondents	Percentage Distribution
Proprietor/Proprietress	17	68
Government employee	8	32
Total	25	100

### DISCUSSION AND CONCLUSION

The highest number of species surveyed in this study was distributed in the families Araceae and Euphorbiaceae. Both families are reported to be cosmopolitan, but thrive best in tropical and sub-tropical regions (Judd *et al.*, 1999). Some of the species surveyed were rare species which were introduced from the other parts of the world. The successful introduction and domestication of exotic species indicate that the Jos-Plateau environment is suitable for the cultivation of a number of tropical and temperate species. This is, perhaps, due to its unique physiographic features.

The family Araceae contains numerous ornamentals including *Philodendron*, *Zantedeschia*, (Arum lily), *Anthurium*, *Caladium*, *Celosia*, *Dieffenbachia* (leopard lily), *Aglaonema* and *Spathiphyllum*. Ornamental species in the family Euphorbiaceae include *Euphorbia*, *Jathropha*, *Codiaeum* (croton) and *Acalypha*. Majority of species surveyed in this study were observed to have been imported, an indication that floriculturists or researchers are yet to fully explore the ornamental potentials of indigenous species. Either way, the nation may be losing a lot of money through capital flight.

Two modes of reproduction, vegetative and sexual, were identified amongst the species surveyed. Seventy-seven per cent of the species surveyed were observed to reproduce vegetatively while only 23 per cent reproduced by seed. Although many respondents interviewed during the study admitted that it was faster and cheaper to propagate the plants vegetatively, the method is not as effective as the sexual method for genetic improvement. Vegetatively propagated plant species can easily be eroded through improper conservation or over-exploitation if they have medicinal and related values. This is one of the factors that lead to endangerment or extinction of some ornamental plant species. It was also observed that many of the people involved in commercial floriculture have no formal training in plant science or horticulture, which is why many of the species surveyed could not be identified by such respondents.

The analysis of the cost distribution of the species surveyed showed a price range of between one hundred naira (₦100) and twenty thousand naira (₦20,000), implying that trading in ornamental plants has a great potential of enhancing not only the individuals' financial income but the national economy. As the Nation considers the diversification of the economy, one area that could be explored is the large-scale cultivation and exportation of ornamental plants.

Apart from the aesthetic value of the species surveyed, ornamental plants are also used to check soil degradation (erosion) and to provide oxygen, through photosynthesis, for other organisms including man (Hartmann *et al.*, 1988). Governments and non-governmental organisations as well as research institutes should intensify awareness campaigns so that these plants can be cultivated around the houses, offices, parks and gardens, roadsides, schools and recreational centres.

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