

A PRELIMINARY CHECKLIST OF ANGIOSPERM FLORA OF FEDERAL UNIVERSITY OF KASHERE CAMPUS, GOMBE STATE

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ABSTRACT

This study investigated the angiosperm diversity of Federal University of Kashere, Gombe State. Conventional methods of species enumeration as described by previous authors were employed and a comprehensive record of the existing species compiled. A total of 76 species distributed in 38 families were recorded. Fabaceae and Apocynaceae were dominant with 6 and 5 species, respectively. The trees constituted the highest number of species with 32 species (42%), followed by the shrubs (24 species or 32%) and the herbs with 20 species (26%). The identified species in the study area play vital roles on the socio-economic development of the people as they are utilised for food, ornamental and medicinal purposes. With the continuous developmental activities within the University Campus, practical conservation measures are needed if the study area is to be protected from total loss of plant biodiversity.

Keywords: Biodiversity; plants; checklist; conservation; Nigeria

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INTRODUCTION

Biodiversity is an abbreviated form of biological diversity and refers to the variety of living things on earth, and their complex assemblages of ecosystems and communities (United Nations Environment Programme, 2010). Plants are an important resource and have immense impact on ecosystems; they also play a vital role in the socioeconomic conditions of the people. Plant diversity and ecological characteristics are important in terms of land degradation and erosion (Ahmad *et al.*, 2010, Bocuk *et al.*, 2009). Plants are universally recognised as a vital component of biodiversity and global sustainability. For example, plants provide food, fibre, fuel, shelter and medicine. Healthy ecosystems based on plant diversity provide the conditions and processes that sustain life and are essential to the well-being and livelihoods of all humankind (Wilson, 1992).

The loss of biodiversity has serious economic and social implication. The genes, species, ecosystems and human knowledge that are being lost represent a living library of options available for adapting to local and global changes (Heywood *et al.*, 1995). Environmental deterioration in arid ecosystems due to indiscriminate human activities including harvesting of vegetation for fuel and medicine, overgrazing, urbanisation and quarrying is evident in the decrease of plant cover, deterioration of soil productivity and aggravation of soil erosion (Batanouny, 1983). Damage to vegetation and the soil surface and in arid lands is not easily repaired (Milton *et al.*, 1994). An accurate picture of the status of plants and the trends that are impacting on them is difficult to determine. The exact number of plant species in the world (estimated currently at 370,000 species) is not yet known. However, it is predicted that as many as two-thirds of the world's plant species are in danger of extinction (The Gran Canaria Declaration, 1999).

The assessment of biological diversity has continued to attract the interest of scientists all over the world. According to Mittermeier *et al.* (2004), West African rainforests rank among the 34 most important biodiversity hotspots of the world. Nigeria, with a rich biodiversity and tropical forest resources, has been faced with challenges of species conservation, resulting from a number of human activities. One of such is habitat degradation. Apart from the protected areas, most of the country's natural habitats have already been converted to human-dominated

ecosystems, such as farmland and pastures, plantations as well as urban and industrial areas. The rainforest and savanna woodland areas are the habitat types that are most threatened especially by agricultural activities (USAID, 2013). Taxonomic surveys have been helpful in documenting the species that had at one time or the other existed in different locations within the country (Soladoye, *et al.*, 2005; Anoliefo *et al.*, 2006). The value of any biodiversity analysis and the adequacy of conservation measures depend on the quality of basic data (Valdecasas and Camacho, 2003). Similar studies have been used to document medicinal plants which are used in the traditional management of ailments in Nigeria and other West African countries (Bhat *et al.* 1990; Asase *et al.* 2005; Soladoye *et al.* 2014). Gbile *et al.* (1981) listed 492 plant species in 112 families as threatened, while Oguntala *et al.* (1996) reported 85 endangered tree species for Cross River State and its environs. In recent times, there seems to be an upsurge of interest in the conservation of flora in Africa. In Nigeria, the most populous nation in Africa, conservation studies are rare. At present, there is lack of accurate database on the available botanicals in the country (Kayode, 2006). Thus, species perceived as being abundant might be getting closer to endanger while those previously perceived as being endangered might be nearing extinction (Kayode, 2006). With the recent threats resulting from the depletion of ozone layer, deforestation activities and rapid rate of urbanisation, it has become imperative to constantly conduct biodiversity assessment of our forests and the entire ecosystems.

As effort is geared towards preventing the conservation of rich biodiversity, adequate quantitative and qualitative ecological data of the flora and fauna of any given area are imperative. Plants are silent architects for survival, without which no life will exist. Consequently, the present study was aimed at documenting the floral species existing within the Federal University of Kashere Campus, Gombe State and to highlight the need for practical conservation to salvage the rich but endangered flora.

MATERIALS AND METHODS

Study area

The study was conducted within the Federal University, Kashere, located in Akko Local Government Area of Gombe State, North-East Nigeria. The site lies on Latitude 9°52'N and Longitude 11°0'E (Kolawole *et al.*, 2021); the Local Government Area is one of the largest in Gombe State (Fig. 1).

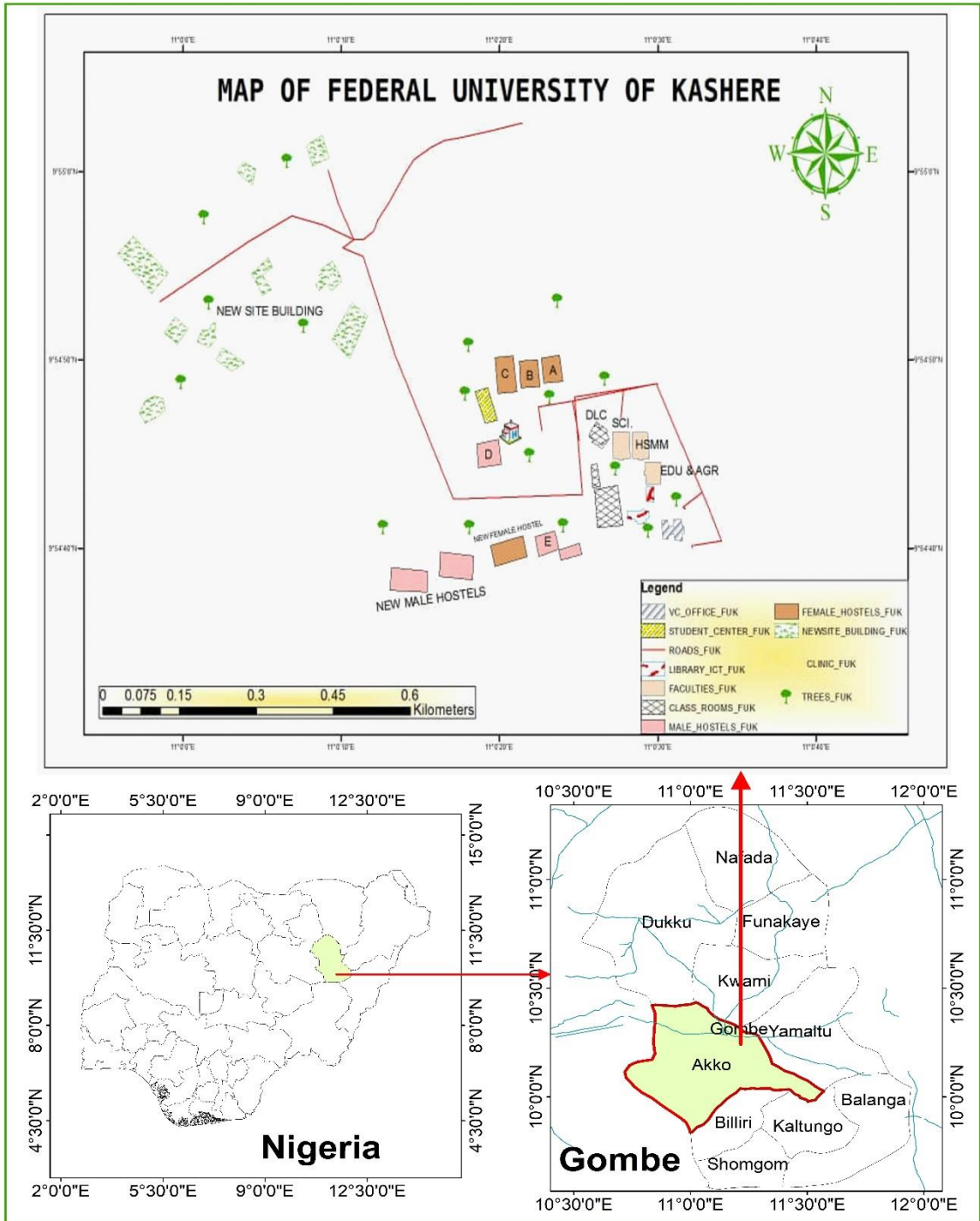


Fig. 1: Location map of the study area

Floristic inventory

The survey involved several visits to the site for collection of plant specimens from disturbed and undisturbed vegetations within the campus. Upon collection, specimens were processed and preserved following conventional taxonomic practice (Okoli and Wilcox-Evwaraye, 1992). They were carefully identified using taxonomic keys provided in literatures (Hutchinson *et al.*, 1954, 1958, 1963, 1968, 1972; Keay, 1989), as well as identification manuals available at Federal University, Kashere Herbarium (FUKH). All scientific names follow International Plant Name Index (IPNI) (<https://www.ipni.org/>). Upon identification, the species were documented along with their families, habit and local name(s) with which they are known within the study area.

RESULTS

A total of seventy-six (76) species distributed in thirty-eight (38) families were collected and identified within the study area (Table 1). Fabaceae had the largest number of species (6), closely followed by Apocynaceae (5), while Euphorbiaceae and Malvaceae had four (4) species each. Eight (8) families had three (3) species each, seven had 2, while the remaining nineteen families were represented by only one (1) species each (Table 2). Trees dominated the list with a total of 32 species (42%), followed by the shrubs with 24 species, while the herbs had 20 species (Figure 2). Many of the plants identified in this study had two or more economic uses some of which include food, ornamental, provision of shade among others (Table 3). Dominant within the study area are *Azadirachta indica* L. and *Mangifera indica* L.

Table 1: List of species identified with their common and local names

S/no.	Scientific name	Family	Common name	Local name
1.	<i>Acacia karroo</i> Hayne	Fabaceae	Karroothorn	
2.	<i>Acer rubrum</i> L.	Sapindaceae	Red maple	
3.	<i>Adansonia digitata</i> L.	Malvaceae	Boabab	Kuka
4.	<i>Aloe barbadensis</i> Mill.	Asphodelaceae	Barbados aloe	bambami
5.	<i>Alternanthera brasiliana</i> (L.) Kuntze	Amaranthaceae	Joy weed	Buzun maraaya
6.	<i>Alternanthera sessilis</i> L.	Amaranthaceae	Rabbit meat	Main kain dubu
7.	<i>Anacardium occidentale</i> L.	Anacardiaceae	Cashew	Fisaa
8.	<i>Annona senegalensis</i> Pers.	Annonaceae	African custard-apple	
9.	<i>Annona squamosa</i> L.	Annonaceae	Sugar apple	Gwandan daaji
10.	<i>Anogeissus leiocarpa</i> (DC.) Guill. & Perr.	Combretaceae	African birch	Marke
11.	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Neem	Dogon yaro
12.	<i>Balanites aegyptiaca</i> (L.) Delile	Zygophyllaceae	Egyptian balsam	aduwa
13.	<i>Beaumontia grandiflora</i> Wall.	Apocynaceae	Nepal trumpet	
14.	<i>Bidens pilosa</i> L.	Asteraceae	Black jack	Fara-kaya
15.	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	Bougainvillea	
16.	<i>Calotropis procera</i> (Aiton) Aiton fil.	Apocynaceae	Rubber bush	Tunfafiyya
17.	<i>Carica papaya</i> L.	Caricaceae	Pawpaw	Gwanda
18.	<i>Cassia obtusifolia</i> L.	Fabaceae	Cassia	Fidili
19.	<i>Casuarina equisetifolia</i> L.	Casuarinaceae	Whistling pine tree	
20.	<i>Chamaerops humilis</i> L.	Arecaceae	Fan palm	
21.	<i>Citrus sinensis</i> (Mill.) Pers.	Rutaceae	Sweet orange	Lemo
22.	<i>Cordyline fruticosa</i> L.	Asparagaceae	Palm lily	
23.	<i>Cotinus coggygria</i> Scop.	Anacardiaceae	Smoke tree	
24.	<i>Cycas revoluta</i> Thunb.	Cycadaceae	Sago palm	
25.	<i>Cymbopogon citratus</i> (DC.) Stapf	Poaceae	Lemon grass	
26.	<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Fabaceae	Flamboyant	gangamau
27.	<i>Dieffenbachia</i> sp.	Araceae	Dumb cane	
28.	<i>Duranta erecta</i> L.	Verbenaceae	Hybrid durantha	
29.	<i>Duranta repens</i> L.	Verbenaceae	Yellow bush	
30.	<i>Erigeron floribundus</i> (Kunth) Sch.Bip.	Asteraceae	Bilbao fleabane	
31.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Asthma Plant	
32.	<i>Euphorbia kamerunica</i> Pax	Euphorbiaceae	Spurge	
33.	<i>Euphorbia milii</i> Des Moul.	Euphorbiaceae	Chris plant	Noonan kurciya
34.	<i>Ficus benghalensis</i> L.	Moraceae	Indian banyan	
35.	<i>Ficus benjamina</i> L.	Moraceae	weeping fig	

36.	<i>Ficus microcarpa</i> Lfil.	Moraceae	Chinese banyan	
37.	<i>Hedranthera barteri</i> (Hook.fil.) Pichon	Apocynaceae	mud plantains	
38.	<i>Hibiscus surattensis</i> L.	Malvaceae	Wild Sour	rahma
39.	<i>Hura crepitans</i> L.	Euphorbiaceae	Possumwood	
40.	<i>Ipomoea asarifolia</i> (Desr.) Roem. & Schult.	Convolvulaceae	Ginger-Leaf Morning-Glory	dúmán kadaá
41.	<i>Ipomoea carnea</i> Jacq.	Convolvulaceae	Bush morning glory	Kaafi kansela
42.	<i>Ixora coccinea</i> L.	Rubiaceae	Scarlet gungle flame	Dawa
43.	<i>Khaya senegalensis</i> (Desv.) A.Juss.	Meliaceae	African mahogany	Madaci
44.	<i>Kigelia africana</i> (Lam.) Benth.	Bignoniaceae	Wild peak	Hantsar giwa
45.	<i>Mangifera indica</i> L.	Anacardiaceae	Mango	Mangoro
46.	<i>Mentha aquatica</i> L.	Lamiaceae	Bargamot minth	
47.	<i>Murraya paniculata</i> (L.) Jacq.	Rutaceae	Orange Jesamine	
48.	<i>Musa sapientum</i> L.	Musaceae	Banana	Ayaba
49.	<i>Myrsine africana</i> L.	Primulaceae	African boxwood	
50.	<i>Nauclea latifolia</i> Sm.	Rubiaceae	Guinea Peach	
51.	<i>Nelsonia canescens</i> (Lam.) Spren.	Acanthaceae	Blue Pussyleaf	
52.	<i>Newbouldia laevis</i> (P.Beauv.) Seem.	Bignoniaceae	Boundary tree	Aduruku
53.	<i>Persea americana</i> Mill.	Lauraceae	Avacado Pear	Piya
54.	<i>Pinus pinea</i> L.	Pinaceae	Pine	
55.	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Masquarade tree	
56.	<i>Portulaca oleracea</i> L.	Portulacaceae	Pigweed	Harshen
57.	<i>Pseuderanthemum carruthersii</i> (Seem.) Guill.	Acanthaceae	Purple False Eranthemum	
58.	<i>Psidium guajava</i> L.	Myrtaceae	Guava	Gwaba
59.	<i>Senna occidentalis</i> L.	Fabaceae	Ant bush	Rai doore
60.	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	Fabaceae	Cassia tree	Malga
61.	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Poaceae	Brittle grass	
62.	<i>Solanum americanum</i> Mill.	Solanaceae	Black nightshade	Bambami
63.	<i>Solanum incanum</i> L.	Solanaceae	Bitter apple	Gauta
64.	<i>Tabernaemontana</i> sp.	Apocynaceae	Pinwheel flower	
65.	<i>Tamarindus indica</i> L.	Fabaceae	Tamarin	Tsamiya
66.	<i>Terminalia catappa</i> L.	Combretaceae	Tropical almond	
67.	<i>Terminalia mantaly</i> H.Perrier	Combretaceae	French mantaly	
68.	<i>Thevetia neriifolia</i> Juss. ex Steud.	Apocynaceae	Yellow oleander	Gamboje
69.	<i>Thuja plicata</i> Donn ex D.Don	Cupressaceae	Christmass tree	

70.	<i>Thunbergia erecta</i> Benth.	Acanthaceae	Bush clockvine	
71.	<i>Tradescantia pallida</i> (Rose) D.R.Hunt	Commelinaceae	Wandering Jew	
72.	<i>Trichilia dregeana</i> Harv. & Sond.	Meliaceae	Natal mahogany	Jan saye
73.	<i>Urena lobata</i> L.	Malvaceae	Caesar weed	
74.	<i>Vernonia cinerea</i> Linnaeus, 1753	Asteraceae	ash-colored fleabane	
75.	<i>Vitellaria paradoxa</i> C.F.Gaertn.	Sapotaceae	Shear butter	Kadanya
76.	<i>Waltheria indica</i> L.	Malvaceae	Sleepy morning	Yankufa

Table 2: Species distribution according to families

S/no.	Family	No.	% composition
1.	Araceae	1	1.3
2.	Arecaceae	1	1.3
3.	Asparagaceae	1	1.3
4.	Asphodelaceae	1	1.3
5.	Caricaceae	1	1.3
6.	Casuarinaceae	1	1.3
7.	Commelinaceae	1	1.3
8.	Cupressaceae	1	1.3
9.	Cycadaceae	1	1.3
10.	Lamiaceae	1	1.3
11.	Lauraceae	1	1.3
12.	Musaceae	1	1.3
13.	Myrtaceae	1	1.3
14.	Nyctaginaceae	1	1.3
15.	Portulacaceae	1	1.3
16.	Primulaceae	1	1.3
17.	Sapindaceae	1	1.3
18.	Sapotaceae	1	1.3
19.	Zygophyllaceae	1	1.3
20.	Amaranthaceae	2	2.6
21.	Bignoniaceae	2	2.6
22.	Convolvulaceae	2	2.6
23.	Rubiaceae	2	2.6
24.	Rutaceae	2	2.6
25.	Solanaceae	2	2.6
26.	Verbenaceae	2	2.6
27.	Acanthaceae	3	3.9
28.	Anacardiaceae	3	3.9
29.	Annonaceae	3	3.9
30.	Asteraceae	3	3.9
31.	Combretaceae	3	3.9
32.	Meliaceae	3	3.9
33.	Moraceae	3	3.9
34.	Pinaceae	3	3.9
35.	Euphorbiaceae	4	5.3
36.	Malvaceae	4	5.3
37.	Apocynaceae	5	6.6
38.	Fabaceae	6	7.9
		76	100

Table 3: Specise distribution according to plant habit and importance

S/no.	Scientific name	Habit	Importance
1.	<i>Acacia karroo</i> Hayne	Tree	Ornamental
2.	<i>Acer rubrum</i> L.	Tree	Ornamental
3.	<i>Adansonia digitata</i> L.	Tree	Vegetables, medicinal
4.	<i>Aloe barbadensis</i> Mill.	Herb	Ornamental
5.	<i>Alternanthera brasiliana</i> (L.) Kuntze	Herb	Ornamental
6.	<i>Alternanthera sessilis</i> L.	Herb	Ornamental
7.	<i>Anacardium occidentale</i> L.	Tree	Fruit
8.	<i>Annona senegalensis</i> Pers.	Tree	Fruit, Medicinal
9.	<i>Annona squamosa</i> L.	Tree	Fruit
10.	<i>Anogeissus leiocarpa</i> (DC.) Guill. & Perr.	Tree	Chewing stick, Ornamental,
11.	<i>Azadirachta indica</i> A.Juss.	Tree	Leaves use chewing stick as pesticide, anti-desertification, anti malaria
12.	<i>Balanites aegyptiaca</i> (L.) Delile	Tree	Ornamental, medicine
13.	<i>Beaumontia grandiflora</i> Wall.	Shrub	Ornamental
14.	<i>Bidens pilosa</i> L.	Herb	Ornamental
15.	<i>Bougainvillea spectabilis</i> Willd.	Shrub	Ornamental
16.	<i>Calotropis procera</i> (Aiton) Aiton fil.	Shrub	Curing of measles, Ornamental
17.	<i>Carica papaya</i> L.	Herb	Boil, purgative, fruit
18.	<i>Cassia obtusifolia</i> L.	Herb	Vegetables
19.	<i>Casuarina equisetifolia</i> L.	Tree	Ornamental
20.	<i>Chamaerops humilis</i> L.	Shrub	Fruit
21.	<i>Citrus sinensis</i> (Mill.) Pers.	Tree	Fruit
22.	<i>Cordyline fruticosa</i> L.	Shrub	Ornamental
23.	<i>Cotinus coggygria</i> Scop.	Tree	Ornamental
24.	<i>Cycas revoluta</i> Thunb.	Tree	Ornamental
25.	<i>Cymbopogon citratus</i> (DC.) Stapf	Herb	Medicinal, food
26.	<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Tree	Ornamental
27.	<i>Dieffenbachia</i> sp.	Shrub	Ornamental
28.	<i>Duranta erecta</i> L.	Shrub	Ornamental
29.	<i>Duranta repens</i> L.	Shrub	Ornamental
30.	<i>Erigeron floribundus</i> (Kunth) Sch.Bip.	Herb	Medicine
31.	<i>Euphorbia hirta</i> L.	Herb	Medicine
32.	<i>Euphorbia kamerunica</i> Pax	Herb	Ornamental
33.	<i>Euphorbia milii</i> Des Moul.	Shrub	Ornamental
34.	<i>Ficus benghalensis</i> L.	Tree	Malaria, asthma, antimicrobial
35.	<i>Ficus benjamina</i> L.	Tree	Ornamental
36.	<i>Ficus microcarpa</i> L.fil.	Tree	Ornamental
37.	<i>Hedranthera barteri</i> (Hook.fil.) Pichon	Shrub	Ornamental
38.	<i>Hibiscus surattensis</i> L.	Herb	Medicine
39.	<i>Hura crepitans</i> L.	Tree	Ornamental
40.	<i>Ipomoea asarifolia</i> (Desr.) Roem. & Schult.	Herb	Ornamental
41.	<i>Ipomoea carnea</i> Jacq.	Shrub	Erosion control, ornamental
42.	<i>Ixora coccinea</i> L.	Shrub	Ornamental
43.	<i>Khaya senegalensis</i> (Desv.) A.Juss.	Tree	Ornamental
44.	<i>Kigelia africana</i> (Lam.) Benth.	Tree	Ornamental
45.	<i>Mangifera indica</i> L.	Tree	Fruit, Medicinal
46.	<i>Mentha aquatica</i> L.	Herb	Ornamental
47.	<i>Murraya paniculata</i> (L.) Jacq.	Shrub	Ornamental
48.	<i>Musa sapientum</i> L.	Shrub	Fruit, Medicinal
49.	<i>Myrsine africana</i> L.	Shrub	Ornamental, serves as shade
50.	<i>Nauclea latifolia</i> Sm.	Shrub	Ornamental
51.	<i>Nelsonia canescens</i> (Lam.) Spreng.	Herb	Ornamental

52. <i>Newbouldia laevis</i> (P. Beauv.) Seem.	Shrub	Ornamental
53. <i>Persea americana</i> Mill.	Tree	Fruit, stomach ulcer, Antihypertension
54. <i>Pinus pinea</i> L.	Tree	Ornamental
55. <i>Polyalthia longifolia</i> Sonn.	Tree	Ornamental
56. <i>Portulaca oleracea</i> L.	Herb	Ornamental, food
57. <i>Pseuderanthemum carruthersii</i> (Seem.) Guill.	Herb	Ornamental
58. <i>Psidium guajava</i> L.	Tree	Malaria, fruit
59. <i>Senna occidentalis</i> L.	Shrub	Medicinal, food
60. <i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	Tree	Ornamental
61. <i>Setaria pumila</i> (Poir.) Roem. & Schult.	Herb	Medicinal
62. <i>Solanum americanum</i> Mill.	Herb	Use as spice, ornamental
63. <i>Solanum incanum</i> L.	Shrub	Food, vegetables
64. <i>Tabernaemontana</i> sp.	Shrub	Ornamental
65. <i>Tamarindus indica</i> L.	Tree	Medicinal, flavor use in juice production
66. <i>Terminalia catappa</i> L.	Tree	Ornamental, food
67. <i>Terminalia mantaly</i> H.Perrier	Tree	Ornamental
68. <i>Thevetia neritifolia</i> Juss. ex Steud.	Shrub	Ornamental
69. <i>Thuja plicata</i> Donn ex D.Don	Tree	Ornamental
70. <i>Thunbergia erecta</i> Benth.	Shrub	Ornamental
71. <i>Tradescantia pallida</i> (Rose) D.R.Hunt	Herb	Ornamental
72. <i>Trichilia dregeana</i> Harv. & Sond.	Tree	Fruit, Ornamental
73. <i>Urena lobata</i> L.	Shrub	Medicine
74. <i>Vernonia cinerea</i> L.	Herb	Ornamental
75. <i>Vitellaria paradoxa</i> C. F. Gaertn.	Tree	Fruit, spice, cream
76. <i>Waltheria indica</i> L.	Shrub	Ornamental, medicine

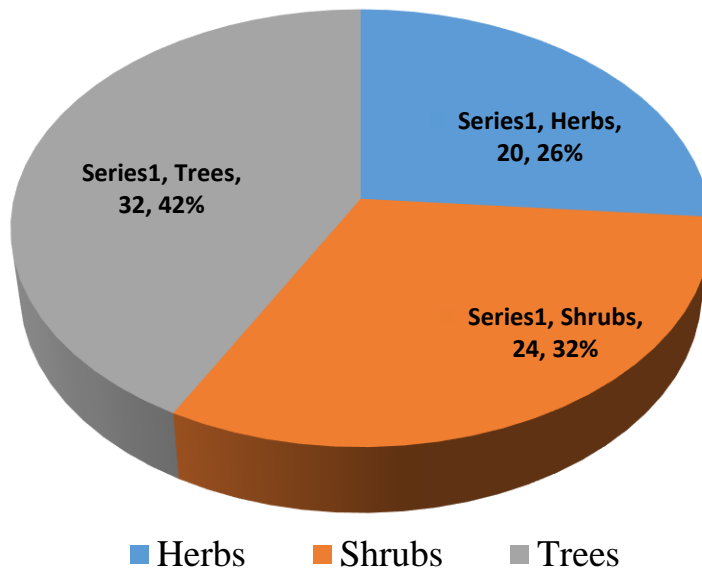


Fig 2. Percentage distribution of plants in relation to their habit

DISCUSSION

The disappearance of plant species due to anthropogenic activities is depleting the world's genetic resources and putting man's heritage of biodiversity under serious threat. Consequently, there is the urgent need to preserve genetic diversity including plant resources of known and unknown economic importance. This will guarantee the availability of the potentials for use for the benefit of the successive generations (Olowokudejo, 1987). The human race in their quest for economic development and improvement of their conditions of life must come to terms with the realities of resource limitations and the carrying capacity of ecosystems must also take into account the needs of future generations. This is the central message to modern conservation (Olowokudejo, 1987).

It has been shown that the study area accommodates a number of useful species ranging from food (*Adansonia digitata*, *Annona senegalensis*, *Carica papaya*, *Citrus sinensis*, *Mangifera indica*, *Persea americana*, *Solanum incarnum*, and *Vitellaria paradoxa*) to medicine (*Azadirachta indica*, *Calotropis procera*, *Cymbopogon citratus*, *Euphorbia hirta*, *Ficus benghalensis*, *Psidium guajava* and *Waltheria indica*) and ornamental (*Acer rubrum*, *Aloe barbadensis*, *Beaumontia grandiflora*, *Bougainvillea spectabilis*, *Duranta erecta*, *Hura crepitans*, *Thevetia nerifolia* and *Tradescantia pallida*). Many of these species had earlier been reported in literatures for use in traditional medicine (Odugbemi, 2008; Soladoye *et al.*, 2014; Soladoye *et al.*, 2018).

Legumes dominated the species recorded. This could be attributed to the conducive climatic and edaphic factors in support of their growth. Perhaps, the most widely utilised plant species in Nigeria are the Angiosperm species. These species are the major sources of raw materials used in the production of vital materials such as paper, foodstuffs, textiles, nutritional materials such as spices and drugs (Schippers, 2000). Apart from their nutritional and medicinal importance, the spices, like the other non-timber products, have significant potentials in terms of employment opportunity (Soladoye and Sonibare, 2003). The non-timber products are now being considered important, if not more, to the rural economy of a developing country like Nigeria (Oseomeobo 1992; Soladoye and Sonibare, 2003). The extraction of these products is now on the increase in Nigeria (Fasola and Egunyomi, 2002). Consequently, there is the need for the conservation of the plant species that are the source of raw materials used in construction, medicine, spice, etc.

It is important to note that biological diversity is treated as a global resource. The conservation of these species is important for sustainability for three seasons. Firstly, exploding human populations are seriously degrading the environment at an alarming rate in the sub-region. Secondly, science is discovering new uses for biological diversity in ways that relieve both human suffering and environmental destruction. Thirdly, much of the diversity is threatened by extinction caused by the destruction of natural habitats, which occurs more in Africa than elsewhere (Wilson, 1988). Dasmana *et al.* (1973) noted that forest exploitation leads to the extinction of animals and plants whose genetic resources are of considerable value to future generations (Round Table, 1969). In the present study, a high rate of collection of some of the identified species for several uses was observed. *Some of these species include Adansonia digitata and Vitellaria paradoxa.*

Forest depletion has destabilised the natural environment and eroded genetic resources throughout the southern part of Nigeria. This trend has affected the northern parts of the country. The exploitation of plant genetic resources appears to be inevitable considering their aesthetic value to man. Opinions are, however, divided about vegetation depletion which is considered as a loss of natural heritage. Allaby (1998) noted that lack of conservation measures amount to an increase in the number of endangered species and this could ultimately result in extinction. Many of the species that are already endangered are faced with the risk of extinction if human activities such as land development, logging and pollution are not checked. Harvey and Hallet (1977) noted that it might not be beneficial to conserve resources for future generation at all costs because the future demands, aspirations, lifestyles and needs of rural people cannot be adequately defined now. The implementation of strategic conservation plans to guide against eventual species disappearance has been suggested by Allen (1980).

This study revealed that the surrounding ecosystem of Federal University, Kashere and Nigeria's ecosystems in general are important sources of food, raw materials, medicine and items of trade by mankind. Seventy-six (76) angiosperms distributed in 38 families and across 3 habits were identified. Although the biodiversity is gradually disappearing, the species identified in this study hold a great potential to transform the nation's agricultural system and contribute to healthcare improvement.

The study also showed that practical measures should be taken to conserve the biodiversity especially the floral species existing within and outside the study area to avoid extinction and maintain the ecosystem. A close monitoring of the study area to avoid indiscriminate habitat destruction by the inhabitants is strongly recommended. Over-exploitation, farming, commercial logging, forest fires, cattle grazing, inefficient use of forest resources and poor enforcement of forest laws, policies and regulations should be avoided. The University management should ensure that these goals are achieved. Forest and biodiversity protection acts should be implemented to avoid over-exploitation and other anthropogenic activities.

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