

SURVEY OF THE PLANTS IN IGBANKE LOCALITY

BY

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SR/2290/RPR/25/32

UNIVERSITY OF BENIN

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**A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF
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SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF BACHELOR OF SCIENCE (HONOURS)
DEGREE (BSC.) IN PLANT BIOLOGY AND BIOTECHNOLOGY**

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CERTIFICATION

This is to certify that this project work was carried out by Victor Ifeanyi **MBURICHEN** in the department of Plant Biology and Biotechnology, Faculty of Life Science, University of Benin, Benin City, Nigeria.

Signed: -----

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Prof. M.E Osawaru

Date

(Project Supervisor)

Signed: -----

- Prof. B. IKHAJIABGE

Date

(Head of Department)

DEDICATION

This work is dedicated to my dear parents, Mr and Mrs OTOGHILE for their haven support financially and otherwise throughout my university days and also to God Almighty for keeping me and family alive.

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God is without doubt, highly appreciated for his all round grace and blessings. I am eternally grateful to my Heavenly father for everything.

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To my siblings, Edith, Sarah and Emmanuel you guys are too much. I love and appreciate all.

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ABSTRACT

The study accessed and documented plants used by Igbanke people. The study area was delimited into 6 sites which were selected using the geographical assortment of the villages found in the community. The 6 sites were within the following villages Omolua, Ottah, Idumuodin, Ake, OIije, and Igbontor. Within the six sites three areas were randomly selected for sampling. A reconnaissance visit was first made to the sample area and questionnaire were administered to key informants. Data collected via questionnaire were retrieved from the informants and analyzed quantitatively and documented. Descriptive statistics were used to present the results using Microsoft Excel 2019. A total of 70 (Seventy) plant species from 33 families were observed in the sampled area. This number comprises 49 (72%) cultivated and 21 (31%) semi-wild. Among these plants, life forms observed include herbaceous life from 26 (38%), 13 (18.0%) shrub, 24 (35.0%) trees and 6 (9.0%) climbers. Omolua and Ottah had the highest diversity of plant species. Solanaceae was the most dominant, comprising seven species, reflecting its significance in both symbolic and practical contexts, including use as food, medicine, and in spiritual offerings. This was followed by Euphorbiaceae, Rutaceae and Malvaceae with six species; Dioscoreaceae had four; Poaceae had three species and others had two and one species. About 80% of the plants had food use while 20% had non food use in the study area. The group of fruits and nuts included 25% of the species which was the highest use. This was closely followed by Medicinal and Vegetable use accounting for 14% each. 9% of the species were used for traditional worship and other cultural / deity. while 6% of the species were used as Roots and tubers. It is recommended that further studies be carried out in different locations in order to enhance conservation efforts globally.

CHAPTER ONE

1.0 INTRODUCTION

In many parts of the world, particularly in developing nations, indigenous communities have relied on local flora for their survival and well-being for centuries. These plants are used by mankind for food, medicine, shelter and cultural/traditional assets (Ogwu *et al.* 2024). A plant is an organism within the biological kingdom Plantae. They have certain characteristics that assigns them to this kingdom some of which are limited motility, multicellularity, cell structure with walls containing cellulose, and organism capable of photosynthesis to manufacture their own food. Plants can be classified in terms of habit as tree, forbs, shrubs, grasses, vines, ferns and mosses (Osawaru *et al.* 2016). Plant products include any goods that contain ingredients or components of plants origin including wooden or stem articles, flowers and foliage, leaves, fruits, roots and tubers, grains, seeds, spices and condiments and processed materials like Garri, plantain flour, Santana and so on. Plant life's is essential for the survival of all animals on earth, including Man. Plants directly, or indirectly through a carnivorous food chain, provide food and other life-supporting commodities. Plants also protect and maintain the environment against erosion and atmospheric imbalance (Ogwu *et al.* 2017).

An adequate food supply is, and always has been, man's most outstanding need. Clothing and shelter, the other prime necessities of life, are derived in great part from products of plant. Wood is one of the most useful plant commodities in the world today, and it played an even greater role in the past. Aside from its use as a structural material, wood is valuable as a source of paper, rayon, various chemicals, and fuel. Other types of fuel, such as coal and petroleum, make available for man the energy stored up by plants that lived and died ages ago (Osawaru *et al.* 2015). Drugs used to cure disease and relieve suffering, are to a great

extent plant products. Industry is dependent on plants for many of its raw materials. Cork; tanning materials and dyestuffs; the oils, resins, and gums used in making paints, varnishes, soap, and perfumes; and rubber, one of the most outstanding materials of modern civilization, are but a few of the valuable products obtained from plants (Owusu-Darko *et al.*, 2014). Aside from their value as sources of food, drugs, and many of the raw materials of industrialism, plants are important to man in many other ways. The role of colourless plants in the economy of nature; the part that bacteria play in disease and many industries; and the effects of forests and other types of natural vegetation in controlling floods and erosion are but a few examples. The aesthetic value of plants has no small influence on man's enjoyment of life, as evidenced by the host of garden enthusiasts and flower lovers. The production and distribution of plant products have a profound influence on the economic and social life of the nations of the world, affecting both domestic conditions and international relations, and even changing the course of history. The maintenance of an adequate supply of food and raw materials for the use of industry is essential to the existence, as well as the prosperity, of any nation. Additionally, plants also have important roles in tribal, social and culture life of man (Osawaru, and Dania-Ogbe, 2012).

This intricate connection between humans, plant and the environment can be observed globally, yet its manifestation is profoundly local and deeply rooted in historical context. An understanding of this connection is the core concern of Ethnobotany. Ethnobotany denotes the study of the dynamic relationship between plants and humans (Voeks, 2017). Osawaru and Dania-ogbe (2010) submitted that ethnobotany is an interdisciplinary science for a holistic approach to man–plant relationships. The subject can also be streamlined to a concept that focuses on the biological, economic, cultural application and implication of plants by people in a specific environment in which they exist (Ogwu *et al* 2024).

Ethnobotany is an essential part of indigenous/local knowledge of a particular society (Osawaru and Dania-ogbe, 2010). Its application is vast and limitless ranging from the search for novel botanical products, especially drug plants, to an understanding of the cultural systems of different communities. The knowledge from an ethnobotanical survey can give an insight into the way most communities survived for centuries, adapting themselves to their environment and maximally utilizing the natural resources available in their environment (Ogwu, *et al.* 2024).

In Nigeria, a nation exceptionally rich in both biodiversity and cultural heritage, the relationship between her indigenes and plants can not just be summarized to the use of plants which is immense in terms of purposes from health to commerce. It is indeed an ingrained part of daily life. The country's vast rainforest ecosystems, especially in the southern regions like Edo State, are veritable natural pharmacies and pantries. Igbanke is a community located in Orhionmwon local government area in Edo State. Igbanke people primarily belong to the Ika tribe with a significant number in the Ika South and North East LGAs of Delta State. Igbanke was carved into Edo State during the creation of the state on August 27, 1991, hence separating them from the larger Ika group in Delta State. The Igbanke community is divided into 6 villages: Umulua, Ottah, Idumuodin, Ake, Olije and Igbontor. The people of Igbanke locality, situated within this rich ecological zone, have a collective, yet often undocumented, wealth of traditional botanical knowledge. This knowledge, meticulously passed down through oral traditions from one generation to the next, forms the bedrock of their primary healthcare system, food security, and socio-economic activities. It is a living heritage that represents a sustainable model of human interaction with nature.

1.1 STATEMENT OF PROBLEM

Despite the foundational role of plants in the lives of the Igbanke people, this invaluable traditional knowledge is facing an accelerated threat of erosion and potential extinction. Modernization, urbanization, and a shift towards Western medicine and dietary habits are causing a significant decline in the transmission and practice of ethnobotanical traditions, particularly among the younger generation. As the custodians of this knowledge—the elders and traditional healers—age, the intricate details of plant identification, preparation, and application are at risk of being lost forever. Furthermore, environmental changes, including deforestation and land degradation due to agricultural expansion and unsustainable harvesting, are diminishing the very plant resources upon which the community depends. There is a notable and urgent gap in empirical, documented research specifically focused on the Igbanke community. Without a formal study to systematically record this knowledge, the potential loss of local remedies, traditional foods, and cultural practices is not just an academic concern but a threat to the community's cultural identity and resilience. This research, therefore, seeks to address this critical knowledge gap by rigorously documenting the plants used in the locality, thereby contributing to its preservation for future generations.

1.2 JUSTIFICATION OF RESEARCH

Despite increasing research on plant found in different parts of Nigeria, specific data on the diversity and uses of plant in Igbanke remain unavailable in published literature. A systematic survey is important to:

- Provide baseline information on species composition and diversity in Igbanke and by extension Edo state.
- Identify the species used by the indigenes of Igbanke.

- Support sustainable utilization and biodiversity conservation of plants.
- Serve as a reference point for botanical research, ethnobotany, teaching, and future ecological studies.

1.3 AIM AND OBJECTIVES

The aim of the study was to identify and document plants used by the indigenes of Igbanke community in Orhionmwon Local Government Area of Edo State

The specific objectives were to:

1. To identify and document plant used by the people of Igbanke locality.
2. To classify the plants into their taxonomic families and groupings.
3. To classify the plants based on their uses.

1.4. LIMITATION OF THE STUDY

- The study is restricted to selected sites in Igbanke community in Orhionmwon Local Government Area of Edo State, Nigeria.
- The study is focused mainly on plants in used by the people of Igbanke.
- A major limitation was the safety of the road to the study area as several kidnappings have been reported along the road making road transport perilous.
- Another limitation encountered was that some respondents could not answer some questions clearly, which affected the depth and accuracy of the responses gotten during the survey.
- Financial and time constraints limited the scope and coverage of the research.

CHAPTER TWO

MATERIALS AND METHODS

2.1. Study area

The Igbanke community is situated in Orhionmwon Local Government Area of Edo State, Nigeria, within the South-South geopolitical zone. The topography of Igbanke is generally characterized by moderately flat to gently undulating terrain typical of the region, which is part of the forest-savanna transition zone. The land supports agricultural activities with fertile soils and natural vegetation. The climate is tropical savanna (Aw), featuring distinct wet and dry seasons that influence the landscape and farming patterns. The total population size estimated in 2017 was 68,500 with an area covering approximately 170.3 km² (65.8 sq mi). Its coordinates are approximately 6.35°N latitude and 6.21°E longitude, From the eastern flank, Igbanke shares common boundary with Mbiri, an Ika speaking community in Delta state, from west, it's bounded by Oghada, another Ika speaking community in Uhumwode LGA in Edo state. In the northern sphere, Igbanke has boundary with Ekpon, Ika speaking community in Igueben LGA while from the south, it has Agbor and Oza-Nogogo, Ika communities in Delta state as neighbours (Figure 2.1).

The Igbanke, historically known as Igbo Akiri, was founded by migrants from Onitsha, Ika land, Edo, and Esan areas. The community traces its roots to migrations predating the slave trade era. The name "Igbanke" is said to have been changed from Igbo Akiri in 1967 by

Samuel Ogbemudia, the then-military governor of the Midwest State. The community comprises six autonomous villages Omolua, Ottah, Idumuodin, Ake, Olije, and Igbontor. Each village has its own traditional ruler, known as an Eze or Obi (in Igbanke tradition). Igbanke is primarily an Ika speaking community and they are predominantly farmers, cultivating crops such as yams, cassava, vegetables, and plantain, which thrive in the rainforest environment.

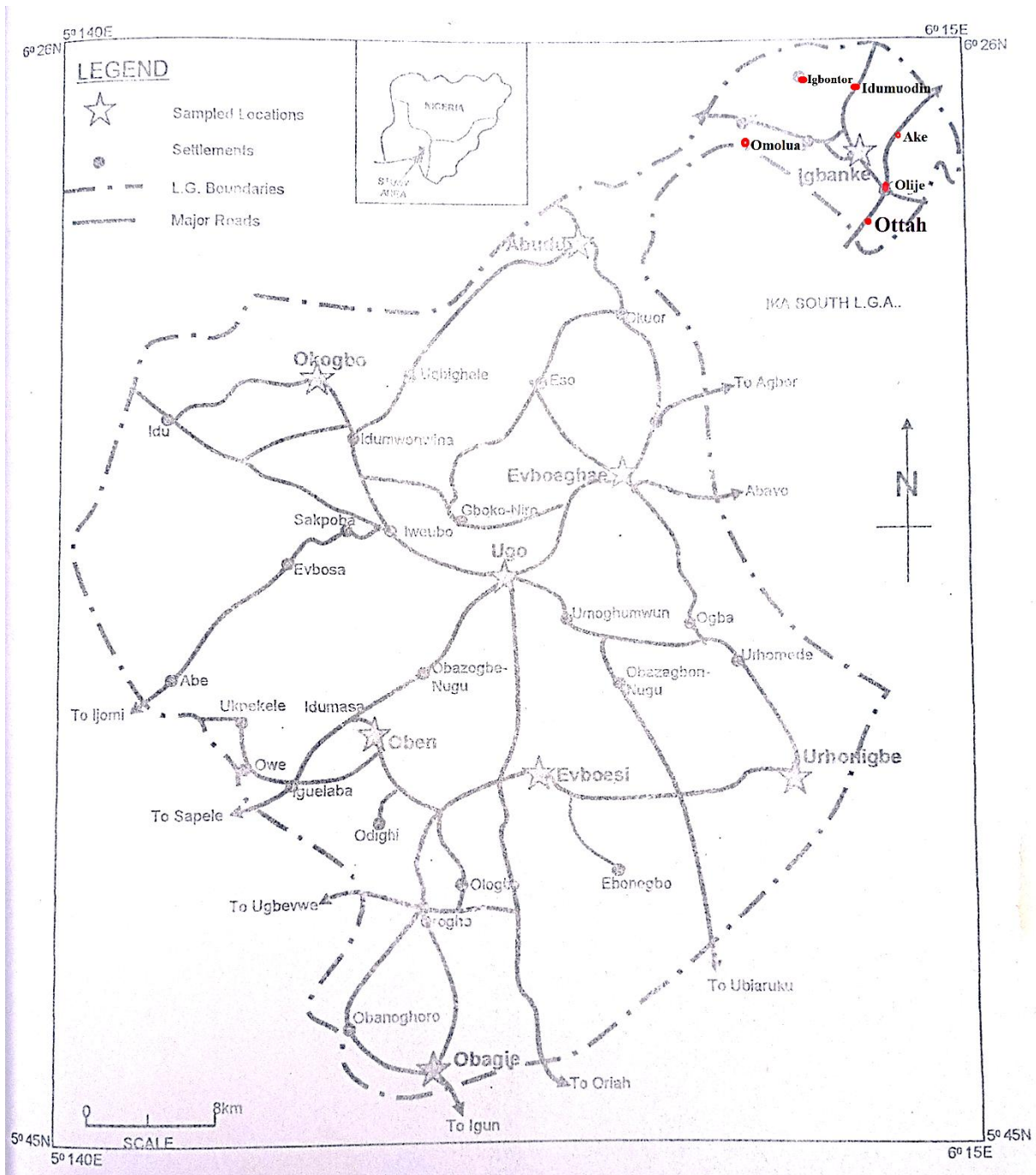


Figure 2.1: Map of the study area

Beyond agriculture, residents engage in hunting, trading, and traditional crafts such as blacksmithing, pottery, and basket making. Women are notably active as traders, while some individuals practice traditional medicine, midwifery, and divination.

The Igbanke community have a festival called Egu Festival (Ohiuhiu) is a significant cultural event held annually between August and September to honor the head deity of Igbanke, associated with harvest and sustenance. The month-long festival includes activities like community cleaning, wrestling contests, dancing competitions, and gift-sharing, culminating in prayers by Nwa Obu priests to mark the start of the new yam harvest. The Igbanke people are known for their hospitality, with distinct greetings varying by village (e.g., “Alua” for welcome, “Laweze” or “Elie” for good morning). These practices reflect a community-oriented culture.

Igbanke has a health center and a general hospital, though access to quality healthcare remains a challenge, prompting calls for improvements. Educational facilities exist, with contributions from diaspora members, such as book donations to schools to promote learning. The presence of Light House Polytechnic, owned by the New Covenant Church, serves as a notable educational landmark near the community. The Benin-Asaba Express Road, partially constructed under the administrations of Professor Oserheimen Osunbor and Comrade Adams Oshiomhole, is the primary access route. The community faces issues like limited infrastructure, healthcare access, and the need for cultural preservation amid modernization.

2.2. Sampling Frame

The study area was delimited into 6 sites which were selected using the geographical assortment of the villages found in the community. The 6 sites were within the following villages Omolua, Ottah, Idumuodin, Ake, Olije, and Igbontor.

2.3. Data Collection

A reconnaissance visit first made to the sample area and questionnaire were administered to key informants.

2.4. Data Analysis

Data collected via questionnaire were retrieved from the informants and analyzed quantitatively and documented. Descriptive statistics was used to present the results using SPSS var. 20.

Cultural Significance Index (CSI)

Cultural importance was assessed based on informants' perceptions of ritual function, symbolic meaning, frequency of use, and exclusivity of use in ceremonies. These data were used to calculate the Cultural Significance Index (CSI) for each species.

$$CSI = \sum_{i=1}^n (q_i \times i_i \times e_i) n_i$$

Use Value (UV)

The UV represents the importance of a plant species in a specific region, as described by Phillips *et al.* (1994), and is determined using the following formula:

$$UV_s = \frac{\sum_i UV_{is}}{n_s}$$

where UV_s signifies the total use value of the species, UV_{is} represents its specific use value, and n_s indicates the number of informants interviewed for that species.

Relative Frequency of Citation (RFC)

The Relative Frequency of Citation (RFC) is a method used to evaluate the significance of plant species mentioned by informants, as outlined in earlier research. The RFC is determined using the following formula.

$$RFC = FC/N$$

where FC stands for the frequency with which a species is cited, and N is the total number of informants in the study. This index does not consider the specific uses of the plants and ranges between 0 and 1. A value near 0 means very few informants have mentioned the species, while a value of 1 indicates that every informant has referred to it.

CHAPTER THREE

RESULTS

3.1 Diversity of Plant Species and Plant Utilization Pattern

A total of 70 (Seventy) plant species from 33 families (Table 3.1) were observed in the sampled area. This number comprises 49 (72%) cultivated and 21 (31%) semi-wild. Among these plants, life form observed include herbaceous life from 26 (38%), 13 (18.0%) shrub, 24 (35.0%) trees and 6 (9.0%) climbers. Omolua and Ottah had the highest diversity of plant species Figure 3.1. Solanaceae was the most dominant, comprising seven species, reflecting its significance in both symbolic and practical contexts, including use as food, medicine, and in spiritual offerings. This was followed by Euphorbiaceae, Rutaceae and Malvaceae with six species; Dioscoreaceae had four; Poaceae had three species and others had two and one species as shown in figure 3.2.

Table 3.1: Diversity of Plant Species in the Study area

S/N	Family	Species	Common Name	Local Name	Status	Habit	Life Cycle	Study Areas					
								Omolua	Ottah	Idumuodin	Ake	Olije	Igbontor
1.	Amaranthaceae	<i>Amaranthus spp</i>	Green	Ebaafor	Cultivated	Herb	Perennial	0	0	+	+	0	+
2.	Amaranthaceae	<i>Celosia argentea</i>	Cockscomb		Cultivated	Herb	Annual	+	+	+	+	+	+
3.	Anacardiaceae	<i>Anacardium occidentale</i>	Cashew	Cashew	Semi wild	Tree	Perennial	+	+	0	+	+	+
4.	Anacardiaceae	<i>Mangifera indica</i>	Mango	Emango	Cultivated	Shrub	Perennial	+	0	+	+	+	+
5.	Annonaceae	<i>Annona muricata</i>	Soursop	soursop	Cultivated	Tree	Perennial	+	+	0	+	0	+
6.	Annonaceae	<i>Dennettia tripetala</i>	Pepper fruit	Umeme	Semi wild	Herb	Perennial	+	0	+	+	+	0
7.	Apocynaceae	<i>Alstonia boonei</i>	Cheese wood.	Ukhu	Cultivated	Herb	Annual	+	+	+	0	+	0
8.	Araceae	<i>Colocasia esculenta</i>	Cocoyam	Akasi	Cultivated	Herb	Annual	+	+	+	+	+	+
9.	Araceae	<i>Xanthosoma sagittifolium</i>	Cocoyam	Akasi	Semi wild	Tree	Perennial	+	+	+	+	+	+
10.	Arecaceae	<i>Cocos nucifera</i>	Coconut	Aku	Cultivated	Tree	Perennial	+	+	+	0	+	+
11.	Arecaceae	<i>Elaeis guineensis</i>	Oil palm tree	Ofugbo	Cultivated	Climber	Annual	+	+	+	+	+	0
12.	Asteraceae	<i>Vernonia amygdalina</i>	Better leaf	Olugbo	Semi wild	Herb	Annual	+	+	+	+	+	+
13.	Bignoniaceae	<i>Newbouldia laevis</i>	Boundary Tree	Ikhimwin	Cultivated	Herb	Annual	+	+	+	+	+	+
14.	Bromeliaceae	<i>Ananas comosus</i>	Pineapple	Ukpwaebo	Cultivated	Herb	Annual	+	+	+	+	+	0
15.	Burseraceae	<i>Dacryodes edulis</i>	Native Pear	Ubie	Cultivated	Herb	Perennial	+	+	+	0	0	+
16.	Caricaceae	<i>Carica papaya</i>	Pawpaw	Uhoru	Cultivated	Herb	Annual	+	+	+	+	+	+
17.	Clusiaceae	<i>Garcinia kola</i>	Bitter Kola	Edu	Semi wild	Tree	Perennial	0	+	+	+	+	+
18.	Crassulaceae	<i>Bryophyllum pinnatum</i>	miracle leaf	Ebeirioven	Cultivated	Shrub	Perennial	+	+	+	+	+	0
19.	Cucurbitaceae	<i>Citrullus vulgaris</i>	watermelon		Cultivated	Herb	Annual	+	+	0	0	0	+
20.	Cucurbitaceae	<i>Telfairia occidentalis</i>	Pumpkin	Uvbeghen	Cultivated	Shrub	Annual	+	+	+	+	+	0

21.	Dioscoreaceae	<i>Dioscorea alata</i>	purple yam	Igii	Cultivated	Shrub	Perennial	0	+	0	+	+	0
22.	Dioscoreaceae	<i>Dioscorea cayenensis</i>	white yam	Igii	Cultivated	Tree	Perennial	+	0	0	+	0	0
23.	Dioscoreaceae	<i>Dioscorea dumetorum</i>	Bitter yam	Igii	Cultivated	Climber	Annual	+	+	0	0	+	+
24.	Dioscoreaceae	<i>Dioscorea rotundata</i>	Purple yam	Igii	Cultivated	Climber	Annual	0	+	+	+	+	0
25.	Euphorbiaceae	<i>Breynia disticha</i>	Snow bush		Cultivated	Herb	Annual	+	+	+	+	+	+
26.	Euphorbiaceae	<i>Jatropha curcas</i>	Physic nut	Omoruruebo	Semi wild	Tree	Perennial	+	+	+	0	+	+
27.	Euphorbiaceae	<i>Jatropha tanjorensis</i>	Hospital too far	Omoruru	Semi wild	Shrub	Perennial	+	0	0	+	0	0
28.	Euphorbiaceae	<i>Manihot esculenta</i>	Cassava	Igari	Cultivated	Tree	Perennial	+	+	+	+	0	+
29.	Euphorbiaceae	<i>Pedilanthus tithymaloides</i>	Devil's backbone		Semi wild	Tree	Perennial	+	0	+	+	0	+
30.	Euphorbiaceae	<i>Plukenetia conophora</i>	Walnut	Okhue	Semi wild	Herb	Annual	+	+	+	+	0	+
31.	Fabaceae	<i>Arachis hypogea</i>	Groundnut	Isaerewe	Cultivated	Herb	Perennial	+	0	+	+	+	+
32.	Fabaceae	<i>Cajanus cajan</i>	Pigeon pea	Ikpekhie	Cultivated	Tree	Perennial	+	+	0	0	+	+
33.	Fabaceae	<i>Dialium guineense</i>	Velvet tamarind	Omugen	Cultivated	Tree	Perennial	+	+	+	0	+	+
34.	Fabaceae	<i>Vigna unguiculata</i>	Cowpea		Cultivated	Climber	Annual	+	+	+	+	+	+
35.	Lamiaceae	<i>Ocimum gratissimum</i>	Scent leaf	Erushi	Semi wild	Tree	Perennial	+	+	+	0	+	0
36.	Lauraceae	<i>Persea americana</i>	Avocado	Ube ebo	Cultivated	Herb	Annual	+	0	0	+	+	0
37.	Malvaceae	<i>Abelmoschus caillei</i>	Okor	Ikhiavbo	Cultivated	Shrub	Biennial	+	+	+	+	+	+
38.	Malvaceae	<i>Abelmoschus esculentus</i>	Okor	Ikhiavbo	Cultivated	Herb	Annual	+	+	+	+	+	+
39.	Malvaceae	<i>Corchorus olitorius</i>	Ewedu	Ujuju	Cultivated	Tree	Perennial	+	+	+	+	+	+
40.	Malvaceae	<i>Glyphaea brevis</i>	Globe Mallow	Uwenriontan	Semi wild	Tree	Perennial	+	+	0	0	+	0
41.	Malvaceae	<i>Gossypium hirsutum</i>	Cotton	Oru	Semi wild	Tree	Perennial	0	0	+	0	+	0
42.	Malvaceae	<i>Theobroma cacao</i>	Cocoa	Koko	Cultivated	Herb	Annual	0	+	0	0	0	+
43.	Meliaceae	<i>Azadirachta indica</i>	neem	Dogoyaro	Cultivated	Tree	Perennial	0	+	+	0	+	+
44.	Moraceae	<i>Ficus elastica</i>	Rubber fig	Obadan	Cultivated	Climber	Annual	0	+	0	0	+	0
45.	Moraceae	<i>Ficus natalensis</i>	Natal fig	Obadan	Cultivated	Tree	Perennial	+	+	+	+	+	+
46.	Musaceae	<i>Musa paradisiaca</i>	Plantain	Ogede	Semi wild	Shrub	Perennial	+	0	0	+	+	0
47.	Musaceae	<i>Musa sapientum</i>	Banana	Ogede	Cultivated	Herb	Annual	+	+	+	+	+	+
48.	Myrtaceae	<i>Psidium guajava</i>	Guava	Eguava	Semi wild	Herb	Annual	+	+	+	+	+	+
49.	Poaceae	<i>Cymbopogon citratus</i>	Lemongrass	Ebetie	Semi wild	Shrub	Perennial	+	+	0	+	0	+

50.	Poaceae	<i>Saccharum officinarum</i>	Sugar cane	Upkete	Cultivated	Shrub	Perennial	+	0	0	0	0	0
51.	Poaceae	<i>Zea mays</i>	Maize	Oka	Semi wild	Tree	Perennial	+	0	+	0	+	0
52.	Portulacaceae	<i>Talinum triangulare</i>	Water leaf	Ebododon	Cultivated	Shrub	Perennial	+	+	+	+	+	+
53.	Rutaceae	<i>Citrus aurantifolia</i>	Lime	Elumeta	Cultivated	Shrub	Perennial	0	+	0	+	0	+
54.	Rutaceae	<i>Citrus aurantium</i>	Bitter Orange	Elume	Cultivated	Herb	Annual	+	+	+	+	0	+
55.	Rutaceae	<i>Citrus grandis</i>	Pomelo	Elume	Cultivated	Tree	Perennial	+	+	0	+	+	+
56.	Rutaceae	<i>Citrus paradisi</i>	Grape fruit	Elume	Cultivated	Tree	Perennial	0	+	+	+	+	+
57.	Rutaceae	<i>Citrus reticulata</i>	Mandarin orange	Elumebo	Cultivated	Tree	Perennial	+	+	+	+	+	0
58.	Rutaceae	<i>Citrus sinensis</i>	Sweet Orange	Elume	Cultivated	Tree	Perennial	+	+	+	+	+	+
59.	Sapotaceae	<i>Gambeya albida</i>	Cherry	Odara	Semi wild	Tree	Perennial	0	+	0	+	+	0
60.	Solanaceae	<i>Capsicum annuum</i>	Sweet pepper	Ose	Cultivated	Herb	Annual	0	+	+	+	+	0
61.	Solanaceae	<i>Capsicum frutescens</i>	chili pepper	Ose	Cultivated	Shrub	Biennial	+	+	+	+	0	+
62.	Solanaceae	<i>Capsicum sinensis</i>	hot peppers	Ose	Cultivated	Herb	Annual	+	+	+	+	+	+
63.	Solanaceae	<i>Cestrum nocturnum</i>	Jasmine		Cultivated	Tree	Perennial	+	+	+	+	+	+
64.	Solanaceae	<i>Nicotiana tobaccum</i>	Tobacco	Itaba	Cultivated	Herb	Perennial	+	+	+	+	+	+
65.	Solanaceae	<i>Solanum aethiopicum</i>	Garden Egg	Ekale	Cultivated	Tree	Annual	0	+	+	+	0	0
66.	Solanaceae	<i>Solanum lycopersicum</i>	Tomato	Etomatosi	Semi wild	Climber	Perennial	+	0	0	+	+	+
67.	Sterculiaceae	<i>Cola acuminata</i>	Kolanut	Evbedo	Cultivated	Tree	Perennial	+	+	+	+	+	+
68.	Urticaceae	<i>Myrianthus arboreus</i>	Monkey Fruit	Ihieghe	Cultivated	Tree	Perennial	+	+	+	+	+	+
69.	Xanthorrhoeaceae	<i>Aloe vera</i>	Aloe vera	Aloe vera	Cultivated	Herb	Annual	+	0	+	+	0	+
70.	Zingiberaceae	<i>Curcuma longa</i>	Turmeric	Agio	Cultivated	Herb	Biennial	+	+	+	+	+	0

Keys: + = present 0 = absent

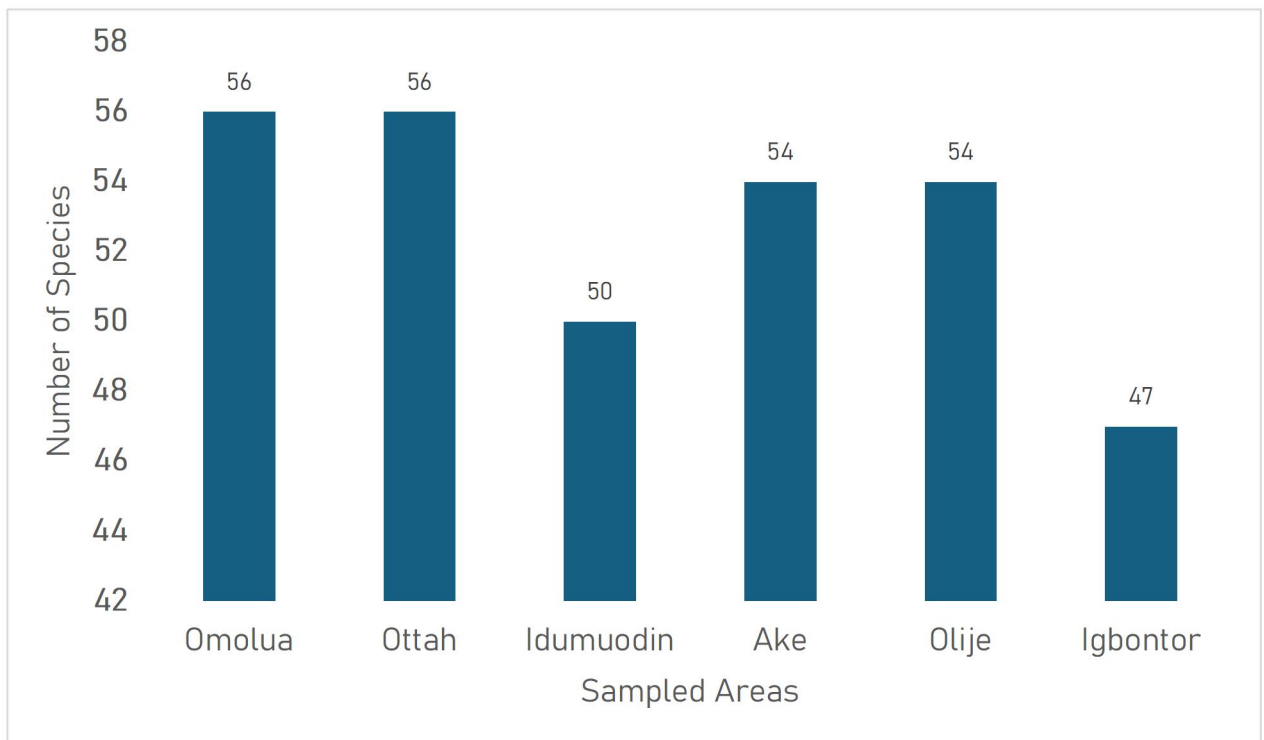


Figure 3.1: Plant species composition of sampled site in the study area

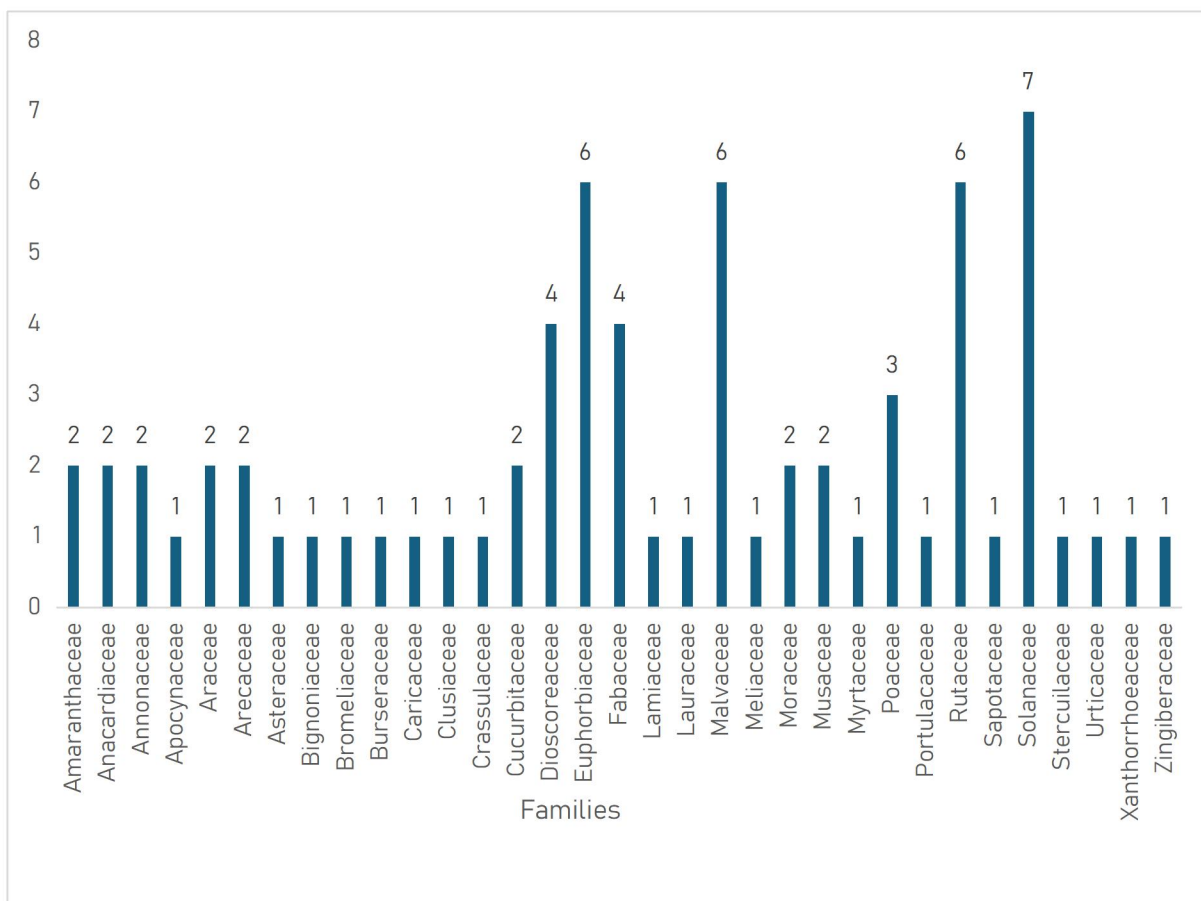


Figure 3.2: Distribution family in the study area

On the basis of utility, Table 3.2 shows the pattern of plant species utilization in Igbanke. About 80% of the plants had food use while 20% had non food use in the study area (Figure 3.3). The total pattern of utility of plant species is shown in Table 3.2 and figure 3.3 and 3.4. The group of fruits and nuts included 25% of the species which was the highest use. This was closely followed by Medicinal and Vegetable use accounting for 14% each. 9% of the species were used for traditional worship and other cultural / deity, while 6% of the species were used as Roots and tubers (Figure 3.4).

Table 3.2: Plant utilization pattern in the study area.

S/N	Species	Common Name	FOOD										NON-FOOD				
			Fruits and Nuts	Tubers and Roots	Cereal	Grain Legumes	Vegetable	Fats and Oil	Condiments and Spices	Beverages and stimulants	Sugar Crop	Medicinal	Timber, Chewing stick, construction, and Boundary	Fuel	Beautification and Ornamental	Poison, Coagulate and Latex	Deity
1	<i>Abelmoschus caillei</i>	Okor					++					+					+
2	<i>Abelmoschus esculentus</i>	Okor					++					+					+
3	<i>Aloe vera</i>	Aloe vera										++		+			
4	<i>Alstonia boonei</i>	Cheese wood.										++	+				
5	<i>Amaranthus spp</i>	Green					++										
6	<i>Anacardium occidentale</i>	Cashew	++														
7	<i>Ananas comosus</i>	Pineapple	++														
8	<i>Annona muricata</i>	soursop	++														
9	<i>Arachis hypogea</i>	Groundnut	++			++											
10	<i>Azadirachta indica</i>	neem										++	+				
11	<i>Breynia disticha</i>	Snow bush												+			
12	<i>Bryophyllum pinnatum</i>	miracle leaf										++					
13	<i>Cajanus cajan</i>	Pigeon pea				++											
14	<i>Capsicum annuum</i>	Sweet pepper							++								
15	<i>Capsicum frutescens</i>	chili pepper							++								
16	<i>Capsicum sinensis</i>	hot peppers							++								
17	<i>Carica papaya</i>	Pawpaw	++									+					
18	<i>Celosia argentea</i>	cockscomb					++										
19	<i>Cestrum nocturnum</i>	Jasmine												++			

20	<i>Citrullus vulgaris</i>	watermelon			++								
21	<i>Citrus aurantifolia</i>	Lime	++						+				
22	<i>Citrus aurantium</i>	Bitter Orange	++										
23	<i>Citrus grandis</i>	Pomelo	++										
24	<i>Citrus paradisi</i>	Grape fruit	++										
25	<i>Citrus reticulata</i>	Mandarin orange	++										
26	<i>Citrus sinensis</i>	Sweet Orange	++										
27	<i>Cocos nucifera</i>	Coconut	++			++							
28	<i>Cola acuminata</i>	Kolanut	++					+			+		++
29	<i>Colocasia esculenta</i>	Cocoyam		++		++							
30	<i>Corchorus olitorius</i>	Ewedu	++			++							
31	<i>Curcuma longa</i>	Turmeric							++				
32	<i>Cymbopogon citratus</i>	Lemongrass							+			++	
33	<i>Dacryodes edulis</i>	Native Pear	++			++							
34	<i>Dennettia tripetala</i>	Pepper fruit	++								++		+
35	<i>Dialium guineense</i>	velvet tamarind	++										
36	<i>Dioscorea alata</i>	purple yam		++									++
37	<i>Dioscorea cayenensis</i>	white yam		++									++
38	<i>Dioscorea dumetorum</i>	Bitter yam		++									++
39	<i>Dioscorea rotundata</i>	Purple yam		++									++
40	<i>Elaeis guineensis</i>	Oil palm tree	+				++	+			+		+
41	<i>Ficus elastica</i>	Rubber fig										+	+
42	<i>Ficus natalensis</i>	Natal fig										+	+
43	<i>Gambeya albida</i>	Cherry	++										+
44	<i>Garcinia kola</i>	Bitter Kola	+						+		++		
45	<i>Glyphaea brevis</i>	Globe Mallow											+
46	<i>Gossypium hirsutum</i>	Cotton					+				+		+
47	<i>Jatropha curcas</i>	Physic nut									++		
48	<i>Jatropha tanjorensis</i>	Hospital too far				++					++	+	
49	<i>Mangifera indica</i>	Mango	++								+		

50	<i>Manihot esculenta</i>	Cassava		++															
51	<i>Musa paradisiaca</i>	Plantain	++																
52	<i>Musa sapientum</i>	Banana	++																
53	<i>Myrianthus arboreus</i>	Monkey Fruit	+		+														
54	<i>Newbouldia laevis</i>	Boundary Tree																	+
55	<i>Nicotiana tobaccum</i>	Tobacco																	
56	<i>Ocimum gratissimum</i>	Scent leaf			++		+												+
57	<i>Pedilanthus tithymaloides</i>	Devil's backbone																	+
58	<i>Persea americana</i>	Avocado	++				+												
59	<i>Plukenetia conophora</i>	Walnut	++																
60	<i>Psidium guajava</i>	Guava	++																+
61	<i>Saccharum officinarum</i>	Sugar cane																	++
62	<i>Solanum aethiopicum</i>	Garden Egg	+				+												
63	<i>Solanum lycopersicum</i>	Tomato	+																++
64	<i>Talinum triangulare</i>	Water leaf																	++
65	<i>Telfairia occidentalis</i>	Pumpkin	+																++
66	<i>Theobroma cacao</i>	Cocoa	+																++
67	<i>Vernonia amygdalina</i>	Better leaf																	++
68	<i>Vigna unguiculata</i>	Cowpea																	++
69	<i>Xanthosoma sagittifolium</i>	Cocoyam																	++
70	<i>Zea mays</i>	Maize	++																

Keys: ++ = Commonly, + = Occasionally

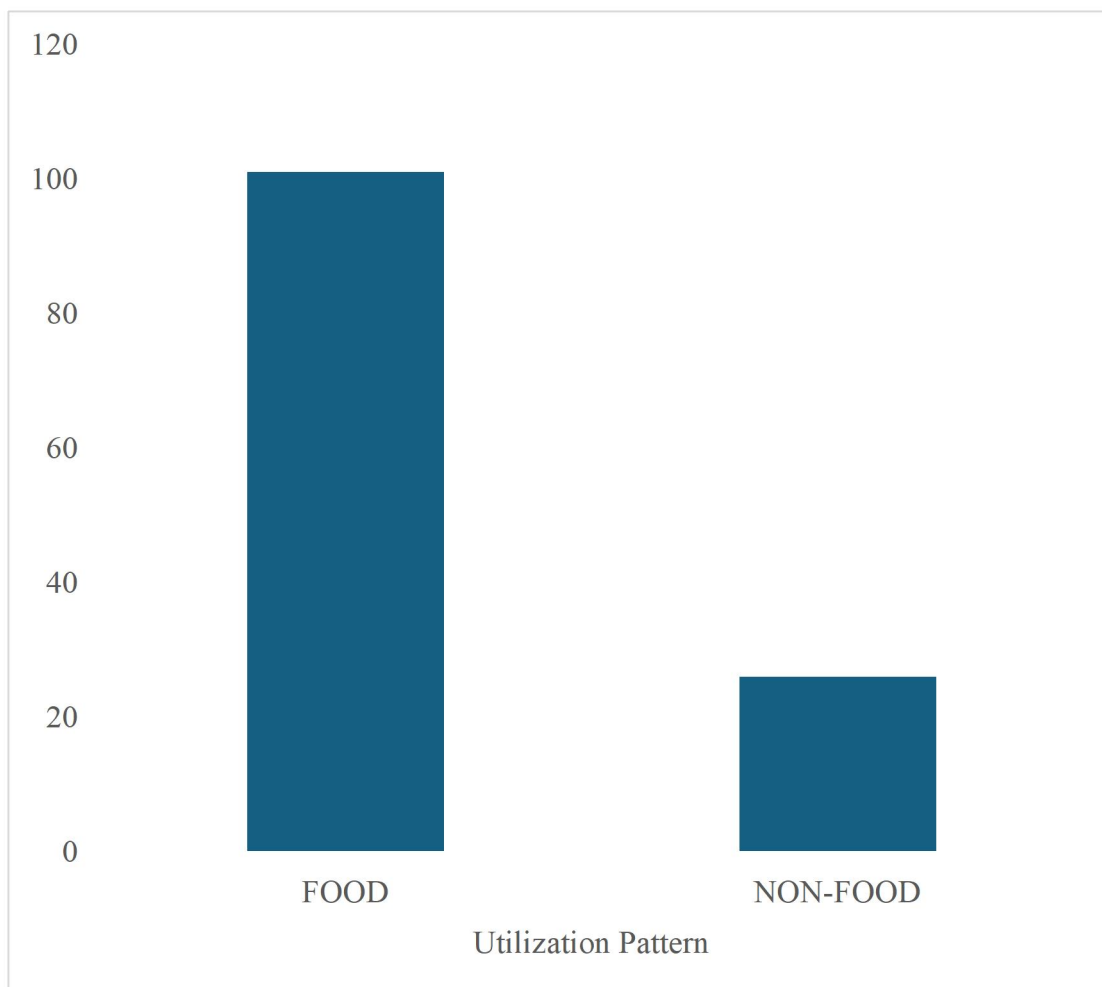


Figure 3.3: Number of plant Species used for Food and Non-food purposes

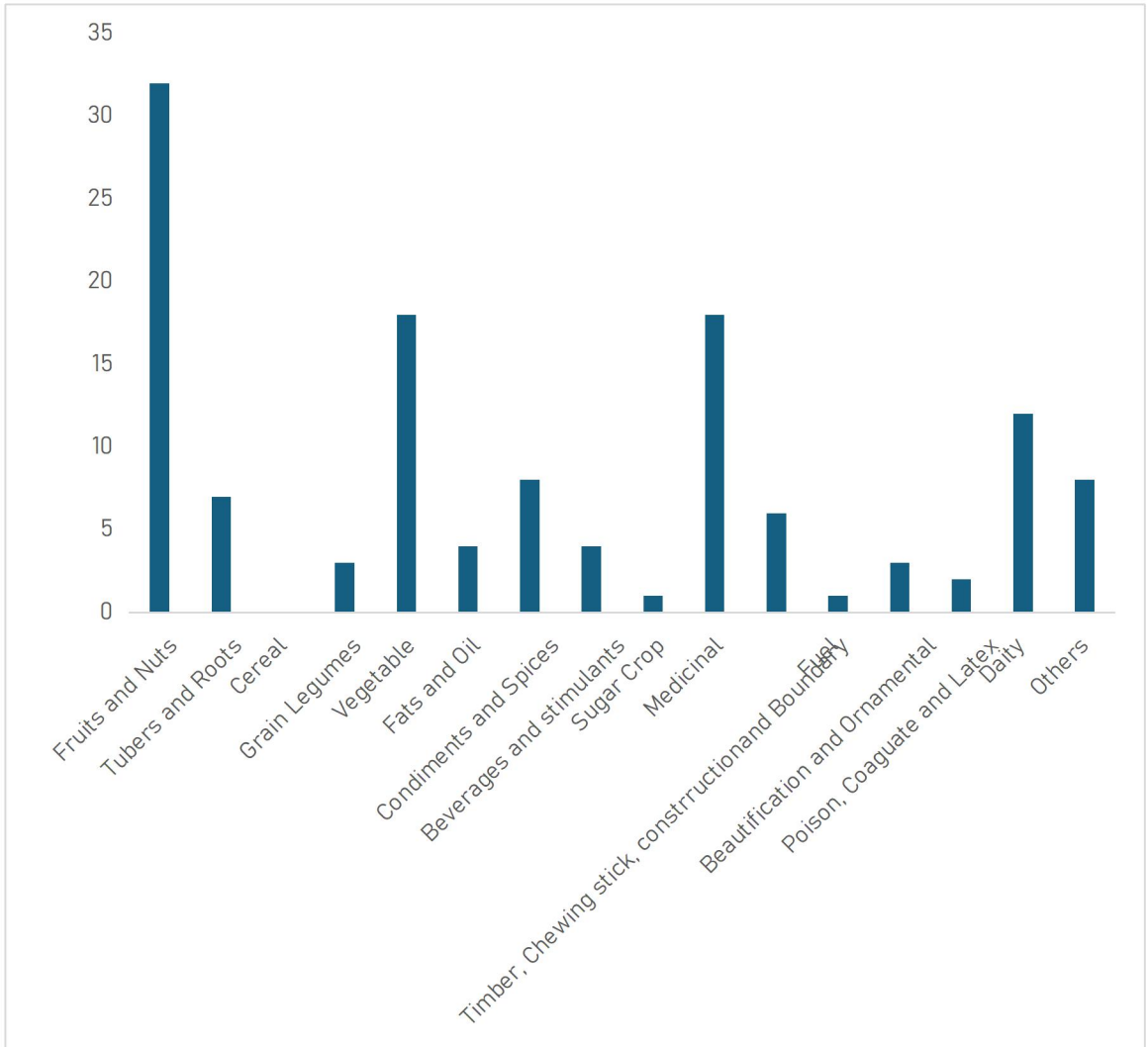


Figure 3.4: Diversity of plant species Utilization in the study area

Table 3.3: Use value index and Cultural index.

S/N	Family	Species	CSI	UV	RFC
1	Amaranthaceae	<i>Amaranthus spp</i>	90	0.7	0.25
2	Amaranthaceae	<i>Celosia argentea</i>	17	2	0.5
3	Anacardiaceae	<i>Anacardium occidentale</i>	20	0.6	0.2
4	Anacardiaceae	<i>Mangifera indica</i>	87	2	0.2
5	Annonaceae	<i>Annona nutricata</i>	2	0.6	0.2
6	Annonaceae	<i>Dennettia tripetala</i>	120	1.6	0.48
7	Apocynaceae	<i>Alstonia boonei</i>	17	2	0.5
8	Araceae	<i>Colocasia esculenta</i>	65	1.6	0.48
9	Araceae	<i>Xanthosoma sagittifolium</i>	167	2.6	0.53
10	Arecaceae	<i>Cocos nucifera</i>	123	2.5	0.4
11	Arecaceae	<i>Elaeis guineensis</i>	189	3	0.73
12	Asteraceae	<i>Vernonia amygdalina</i>	179	2.96	0.73
13	Bignoniaceae	<i>Newbouldia laevis</i>	47	0.95	0.33
14	Bromeliaceae	<i>Ananas comosus</i>	22	0.55	0.18
15	Burseraceae	<i>Dacryodes edulis</i>	11	0.6	0.2
16	Caricaceae	<i>Carica papaya</i>	53	1.6	0.48
17	Clusiaceae	<i>Garcinia kola</i>	190	3	0.73
18	Crassulaceae	<i>Bryophyllum pinnatum</i>	49	0.95	0.33
19	Cucurbitaceae	<i>Citrullus vulgaris</i>	1	1.55	0.4
20	Cucurbitaceae	<i>Telfairia occidentalis</i>	78	0.95	0.33
21	Dioscoreaceae	<i>Dioscorea alata</i>	75	2.7	0.53
22	Dioscoreaceae	<i>Dioscorea cayenensis</i>	196	3	0.73
23	Dioscoreaceae	<i>Dioscorea dumetorum</i>	185	3	0.73
24	Dioscoreaceae	<i>Dioscorea rotundata</i>	187	2.6	0.2
25	Euphorbiaceae	<i>Breynia disticha</i>	23	1.55	0.4
26	Euphorbiaceae	<i>Jatropha curcas</i>	175	1	0.73
27	Euphorbiaceae	<i>Jatropha tanjorensis</i>	182	2.2	0.73
28	Euphorbiaceae	<i>Manihot esculenta</i>	112	3	0.65
29	Euphorbiaceae	<i>Pedilanthus tithymaloides</i>	43	0.9	0.33
30	Euphorbiaceae	<i>Plukenetia conophora</i>	25	1.6	0.48
31	Fabaceae	<i>Arachis hypogea</i>	142	2.5	0.2
32	Fabaceae	<i>Cajanus cajan</i>	22	1.6	0.48
33	Fabaceae	<i>Dialium guineense</i>	35	0.6	0.2
34	Fabaceae	<i>Vigna unguiculata</i>	14	2.55	0.63
35	Lamiaceae	<i>Ocimum gratissimum</i>	3	2	0.5
36	Lauraceae	<i>Persea americana</i>	21	0.9	0.33
37	Malvaceae	<i>Abelmoschus caillei</i>	132	2.56	0.46
38	Malvaceae	<i>Abelmoschus esculentus</i>	112	2.55	0.4
39	Malvaceae	<i>Corchorus olitorius</i>	11	0.95	0.33
40	Malvaceae	<i>Glyphaea brevis</i>	45	0.55	0.18

41	Malvaceae	<i>Gossypium hirsutum</i>	31	0.6	0.2
42	Malvaceae	<i>Theobroma cacao</i>	3	2.3	0.48
43	Meliaceae	<i>Azadirachta indica</i>	3	1.55	0.4
44	Moraceae	<i>Ficus elastica</i>	37	2	0.5
45	Moraceae	<i>Ficus natalensis</i>	50	2.1	0.34
46	Musaceae	<i>Musa paradisiaca</i>	101	2	0.73
47	Musaceae	<i>Musa sapientum</i>	49	0.95	0.33
48	Myrtaceae	<i>Psidium guajava</i>	27	0.6	0.2
49	Poaceae	<i>Cymbopogon citratus</i>	1	1.6	0.48
50	Poaceae	<i>Saccharum officinarum</i>	112	0.55	0.18
51	Poaceae	<i>Zea mays</i>	140	2.55	0.63
52	Portulacaceae	<i>Talinum triangulare</i>	83	2.6	0.2
53	Rutaceae	<i>Citrus aurantifolia</i>	23	0.6	0.2
54	Rutaceae	<i>Citrus aurantium</i>	17	1.6	0.48
55	Rutaceae	<i>Citrus grandis</i>	23	1.55	0.4
56	Rutaceae	<i>Citrus paradisi</i>	12	0.95	0.33
57	Rutaceae	<i>Citrus reticulata</i>	12	2.55	0.63
58	Rutaceae	<i>Citrus sinensis</i>	11	2	0.5
59	Sapotaceae	<i>Gambeya albida</i>	144	2.5	0.73
60	Solanaceae	<i>Capsicum annuum</i>	178	2.7	0.73
61	Solanaceae	<i>Capsicum frutescens</i>	43	2.2	0.35
62	Solanaceae	<i>Capsicum sinensis</i>	23	2.8	0.2
63	Solanaceae	<i>Cestrum nocturnum</i>	78	0.6	0.2
64	Solanaceae	<i>Nicotiana tobaccum</i>	42	1.55	0.4
65	Solanaceae	<i>Solanum aethiopicum</i>	11	0.95	0.33
66	Solanaceae	<i>Solanum lycopersicum</i>	141	2.8	0.18
67	Sterculiaceae	<i>Cola acuminata</i>	190	3	0.73
68	Urticaceae	<i>Myrianthus arboreus</i>	49	1.6	0.48
69	Xanthorrhoeaceae	<i>Aloe vera</i>	2	1.55	0.4
70	Zingiberaceae	<i>Curcuma longa</i>	12	2.55	0.63

CSI- Cultural Significance Index, UV- Use Value, RFC- Relative Frequency of Citation

CHAPTER FOUR

DISCUSSION

The diversity of plants used by the Igbanke people was investigated in this study. 70 (Seventy) plant species from 33 families (Table 3.1) were reported, identified and documented. The habit of the plants were herb 26 (38%), 13 (18.0%) shrub, 24 (35.0%) trees and 6 (9.0%) climbers. The high percentage of herbs is indicative of the type of plants the indigenise of the communities use more. Species from the family Solanaceae was the most dominant, comprising seven species, reflecting its significance in both symbolic and practical contexts, including use as food, medicine, and in spiritual offerings. This was followed by Euphorbiaceae, Rutaceae and Malvaceae with six species; Dioscoreaceae had four; Poaceae had three species and others had two and one species as shown in figure 3.2.

Local names of crop plants in Ika and Bini dialect were reported among tribes surveyed. Documentation of local names is highly valued by Rogers (1963), Rogers and Applan (1973), Cunningham (2001), Allem (2002), Bressan *et al* (2005), Osawaru and Dania-Ogbe, (2010). Names and naming are important determinant factors in local societies (Penny, 2001). However, the name given to plants are anecdotal, associated with the origin and economic propensity of plant. For example, "ivin-ebo" in Bini signifies coconut of European origin. These local names act as the local knowledge as they aid detailed revelation about the crop as the names assist to ask more information from the community during collecting missions (Osawaru, 2025). Although local names are not recommended directly for scientific accounts of plants as they lack uniformity and consistency (Singh, 2008), yet they may certainly be considered as a useful tool for obtaining useful information on plants. Local names provide means of reference by local people in a particular area. Also, in some cases the plants are well known with their local name than the common names (Osawaru and Ogbu, 2014).

On the basis of utility, the plants are basically used for food and non-food purposes. Nine categories of uses are listed for food purposes. This are reflected in Tables 3.3. Of the 80 % used for food purpose (Figure 3.3), fruits and vegetable had the highest percentage of usage, which are 25 % and 14% for fruits and vegetables respectively. This is an indication that the indigenes have and utilize rich and diverse pool of fruits and vegetables, which are of great nutritional value. This is in line with the study of Odhay *et al.* (2007), who pointed out that indigenous vegetables and fruits represent inexpensive but high-quality nutrition sources for the poor segment of the population.

In terms of the non-food use categories medicine and deity had the highest percentage of plant use 14% and 9% respectively. The result reveal that significant number of plant species is been used by the Ika speaking people of Edo state in their various cultural activities. Plant like *Cola acuminata*, *Cocus nucifera*, *Dioscorea* spp. and *Elaeis guineensis* are frequently used in almost all the cultural ceremonies common to the indigenes in the study area such as weddings, burial and Egu Festival (Ohiuhiu). Uzodimma (2013) reported 13 plant species belonging to 38 families used by the people of Ogii and Okigwe of Imo State, Southeastern Nigeria for ceremonial purposes. The higher number of plants used ceremonially is suggestive that the Ogii and Okigwe people have strong dependence on plants.

Many of the plants found in the study area were of medical importance to the people. Some plants were used by the indigenes in the treatment of malaria as exhibited by plant parts of *Mangifera indica* (Mango), *Psidium guajava* (Guava) and *Elaeis guineensis* (African palm tree). Plant species such as *Aloe vera* and *Elaeis guineensis* were reported to be used in treatment of Asthma. Cough symptoms were submitted to have been effectively treated also with plant species such as *Mangifera indica* (Mango), and *Musa paradisiaca* (Plantain).

Further, Prostrate cancer, stomach ache, insomnia, enhance fertility, reliefs diabetes have been remedied by *Vernonia amygdalina* (Bitter leaf).

Plants are important traditionally as it serves as a mechanism for accessing, benefit-sharing and documenting traditional knowledge for sustainable socioeconomic development and poverty alleviation in the country as proposed by Leonti, (2012). There was high consensus among the respondents reflecting the significance of medicinal plants to the people which further indicated their effectiveness. Ethnobotanical survey has been considered as one of the ways to identify and select Plants with unparallel important properties (Pachter, 1994). Ethnobotanist and natural products chemist were able to link methods of preparation and administration of herbal preparations to efficacy in pharmacological evaluation (Aishatu *et al.*, 2017). In the current study many of the plants (14%) were identified by the people to be used in the preparation of several herbal mixtures for treatment of diseases. The plants also possessed other qualities such been used for Timber, Chewing stick, construction and Boundary (*Psidium guajava*), Beautification and Ornamental (*Cestrum nocturnum*).

Cultural Significance Index (CSI) indicates the level of cultural importance crops are to the indigenous people. A high CSI values mean the crops are used for festivals, traditional weddings, burial, feast, worship of traditional deities and other cultural practises by the indigenes. Plants like *Cola accuminata*, *Elaeis guineensis*, *Dioscorea* spp., and *Garcinia kola* had above 180 Cultural Significance Index suggesting the importance and utilization of these crops in the traditional and cultural activates of the people of Igbanke.

The high Use Value (≥ 2.5) category also consists of plants that play significant roles in traditional and ecological practices and are frequently used for various medicinal, cultural, and industrial purposes. Among the highest-valued species are *Manihot esculenta*, *Cola accuminata*, *Elaeis guineensis*, *Dioscorea* spp., and *Garcinia kola* (UV = 3.00), all of which

are highly regarded for their cultural, medicinal, food industrial and ecological importance. Other plants with high UV (≥ 2.5) include *Curcuma longa*, *Cocos nucifera*, *Vernonia amygdalina*, *Vigna unguiculata*, *Abelmoschus* spp., *Arachis hypogea* and others.

The Relative Frequency of Citation (RFC) values reveal the most frequently mentioned species, while the UV reflects the extent of their applications across medicinal, cultural, and industrial uses. Crops like *Cola accuminata*, *Elaeis guineensis*, *Dioscorea* spp., and *Garcinia kola* had very high RFC value due to its multi-facet uses.

The findings underscore the diverse roles that plant species play in supporting both ecological balance and human well-being. The relationship between RFC and UV demonstrates that species with high RFC values are frequently mentioned in local knowledge systems, while those with higher UVs are recognized for their broader range of applications, reflecting their cultural, medicinal, and ecological significance.

Awareness program should also be organized by the government against deforestation, because a few of the plants surveyed were vulnerable like *Garcinia kola* and while some wild types were no more available in some residential areas due to increased level of urbanization. Government should provide a forum for growers, traders, institutes and communities to be sensitised on the importance of conserving plant genetic resources and sustainable utilization of same.

4.1. CONCLUSION

Plants provide valuable functions as foods, livelihood sustenance and indigenous knowledge and their utilization has been applied over centuries. Presently, the study established a data bank of some plants and plant products that are commonly found and used in Igbanke. The diversity of these plants spread across 33 families and 70 species. It is safe to say that the people of Igbanke depend on these plants for their everyday life from food to medicine and deity. There is a need to further intensify efforts in documenting ethnobotanical knowledge of plant in different communities in Nigeria. This will contribute to the concerted efforts in conservation and sustainable utilization of crop plants globally.

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