

Checklist of Ethno-Medico-Botanical Trees in Igbariam Campus of Chukwuemeka Odumegwu Ojukwu University (COOU), Anambra State, Nigeria

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Abstract: The inventory of tree species and their ethno-medico-botanical information was carried out to document species richness and provide the first comprehensive checklist of trees in Chukwuemeka Odumegwu Ojukwu University, Igbariam campus, Anambra State, Nigeria. The checklist presents the species in botanical and local names, families, origin, habit and their ecological status. Results showed that 45 trees species of ethnomedicinal values with a total frequency of 695 belonging to 40 genera in 25 families were identified and documented to cure about 50 health disorders. *Elaeis guineensis* had the highest occurrence and Fabaceae family recorded the highest number of species (5) while 16 families were found to have 1 species each. Leaf had the highest frequency (31.93%) in plants part used for medicinal purposes while whole plant, fruit water/juice, wood and shell were the least (0.84%). Sixty per cent (60%) of all the species are exotic while (40%) are indigenous to Nigeria and West Africa. One species (*Delonix regia*) according to IUCN redlist is vulnerable. University management should intensify efforts towards planting more trees and protection of the existing ones. Avenue planting, establishment of botanical gardens and tree plantations within the area is highly recommended.

Keywords - Tree checklist; ethnobotany, ethnomedicine, COOU, Igbariam campus, Nigeria, health disorder.

I. INTRODUCTION

Proper knowledge of the environment, its richness, biological diversity, composition, and abundance is a basic necessity for the sustainable protection and conservation of trees. Trees are known for their numerous uses; the environmental services they offer – air purification, soil binding, erosion control, rain interception, pollution and noise absorption, wind break/shelter belts; and the direct benefits derived by both man, animals and other organisms co-existing in the environment (food, fruits, fuelwood, timber, roots and herbs, resins, tannins, pulp, fibre, etc.). Trees are also key pointers to changes and disturbances in a landscape. Africa has been known for dependent on plants for their health needs. Trees serve as the storehouse of therapeutic materials with insignificant or out rightly no side effects.

The science of ethnobotany began to advance from the early 20th century which widened the horizon of pharmaceutical research from people and plant centric to a broad discipline involving assemblage and recording of local uses, economy, ecology, public health, pharmacognosy, etc. It

has turn out to be progressively valued in the healthcare improvement and conservation programmes in various parts of the world [1]. Ethnobotany is the science that studies the interactions between humans and plants. As ethnomedicine relatively studies the approaches of different culture to health, disease and sickness using bioactive components in plants; ethnoforestry however is act of establishing, conserving, managing and utilizing the resources from the forest by rural people via traditional culture and belief. Medicinal plants are plants containing essential components used in the treatment of diseases and/or as pain relieve [2] on human or animal body. According to [3], they usually comprise of various chemical compounds that can act independently, as supplements, or in combination with others to improve health.

Globally, approximately 80% of the populations particularly in the rural areas are dependent on herbs and tree species for their health and medicinal needs [4] and has continuously become the foundation of primary healthcare [5], [6]. In Africa, according to [7] prior to the use of orthodox medicine, traditional medicine formed the basic form of socio-cultural heritage of the people. Trees are therefore untapped renewable natural resources in the field of medicine and are embedded with active ingredients for the cure of innumerable diseases. Families in Nigeria has the tradition of planting these wild trees around homes as boundary markers, shade in the barns, for fencing and on farmlands for easy access and to better harness their health values at all times. It is a more reliable and affordable means of treating known ailments for the rural dwellers. Studies have shown that plants used in traditional medicine in Nigeria have a variety of constituents essential for the treatment of prolonged ailments and chronic diseases [8] and for maternal healthcare mostly in rural communities where conventional health amenities are not available or inaccessible [9].

However, modernity and poor interest of youths in traditional medicine has brought about a sharp drift and almost total abandonment of traditional medicine for orthodox way of health improvement. Thus, there is urgent need for ethnobotanical knowledge and documentation of the medicinal importance of various tree species within our vicinity.

Tree checklist offers a yardstick, a baseline and high quality reference documents for further ecological studies, information on fast disappearing species due to deforestation or on the increase in species composition with time; a guide to restoration of degraded and erosion prone areas. It will improve management, protection and conservation of the trees within university community with major focus on the endangered trees of economic, ecological and social benefits [10].

II. MATERIAL AND METHODS

A. Study area

The study was conducted in Chukwuemeka Odumegwu University (COOU) Igbariam Campus Anambra State, Nigeria formerly known as Anambra State University. The study area Igbariam campus is situated at the former site of the College of Agriculture. It covers an area of about 714 hectares and located in southeastern Nigeria between longitude 6.94869° to 6.98174° E and latitude 6.27321° to 6.31003° N (Fig. 1) on elevation of 76m above sea level. The climate is dominated with distinct dry and wet seasons with a temperature range of 24 – 36°C and annual rainfall of 1520-2020mm. The vegetation in this area is half cleared dominated by farmlands with a wide expanse of palm tree (*Elaeis guineensis*) plantation. It has a table to gentle sloppy terrain with streams some of which dries up at the peak of dry season.

B. Data Collection and Analysis

The field survey was conducted from May - December, 2021. Trees growing on farmlands, built up areas within the study area were identified into their respective species and families. Data presented here is founded on local knowledge, oral interviews of traditional healers and reviews of literature published in scientific journals.

Data obtained were subjected to descriptive statistics using frequency distribution, tables, pie and bar charts.

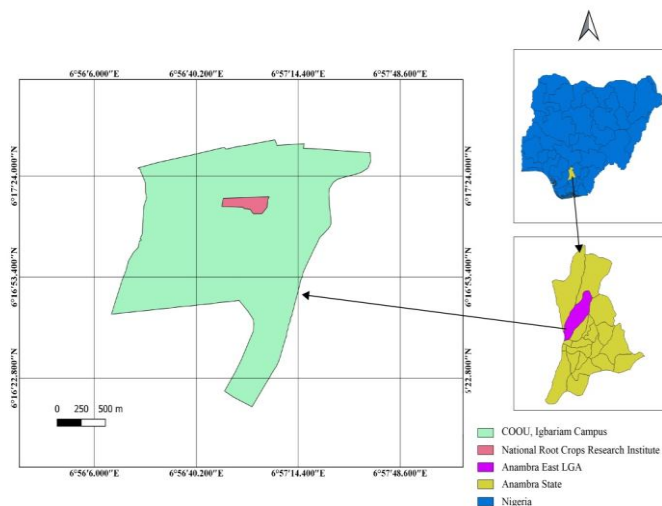


Fig. 1: Chukwuemeka Odumegwu University (COOU) Igbariam Campus Anambra State, Nigeria

III. RESULTS AND DISCUSSION

TABLE I: DISTRIBUTION OF TREE SPECIES OF ETHNOMEDICINAL IMPORTANCE ACCORDING TO FAMILIES ENCOUNTERED IN THE STUDY AREA

Family	Species frequency
Anacardiaceae	3
Annonaceae	2
Apocynaceae	1
Araucariaceae	1
Arecaceae	4
Bignoniaceae	1
Burseraceae	2
Caricaceae	1
Casuarinaceae	1
Combretaceae	2
Fabaceae	5
Gentianaceae	1
Irvingiaceae	1
Lamiaceae	1
Malvacaceae	1
Meliaceae	1
Moraceae	4
Moringaceae	1
Myrtaceae	4
Oxalidaceae	1
Poaceae	1
Rubiaceae	1
Rutaceae	3
Sapotaceae	1
Verbenaceae	1
Total	45

A total of 45 trees species of ethnomedicinal importance belonging to 40 genera in 25 families were identified and documented within Igbariam Campus of the University (Table I and II). Fabaceae family was common and had the highest number of species (5), Arecaceae, Moraceae and Myrtaceae had 4 species each, while 16 families were recorded to have 1 species each (Table I). The prevalence of Fabaceae families has been reported by several studies [11] - [14]. According to [15] Fabaceae taxa is among the three (3) largest families worldwide and are of great ethnomedicinal importance. Their wide spread could be attributed to their multipurpose nature; serves as fodder for animal and source of food for humans, fixes nitrogen on agricultural lands and have good soil binding properties. Soladoye *et al.* [16] stated that the family's propagative biology particularly their mode of dispersal agree to extensive spread across the various habitat condition in Nigeria.

Twenty-seven (60%) of all the species were exotic but naturalized within the study area [17] whereas 17 (40%) were indigenous to Nigeria and West Africa (Fig. 2). This illustrates the increasing numbers of exotic species that have acclimatized and are established in native habitats and the fast disappearance of indigenous trees in the area. This result is not in line with [11] who reported a higher number of the registered taxa (66%) as native tree species and 34% non-native. This could be due to the introduction exotic species for beautification. Majority of the identified trees were found in residential areas and around administrative buildings in the old site area of the campus, with scanty trees in the farmlands (Fig. 4). The population and species abundance is moderately low compared to the size of the study area. This could be attributed majorly to the un-censored felling of trees for fuelwood by fringing farm settlements. Ecosystem services offered by trees are enormous, thus, there is need to evaluate these benefits to form a benchmark and ascertain areas that require additional resources [18].

Of all the 697 tree stands surveyed, *Elaeis guineensis* was the predominant with the frequency of 21.09%, followed by *Gmelina arborea* (17.36%); *Polyalthia longifolia* (10.91%) and *Mangifera indica* (7.60%). *Elaeis guineensis* was cultivated making *G. arborea* the most dominant wild tree. Others were found in patches of varying degree within the study area to be natural remedies for about fifty health disorders (Table III). This was not in agreement with the findings of [13] who reported *Azadirachta indica* to having highest number. Practically, all tree parts were used individually or mixed with other parts for medication (Table III), however, Fig. 3 showed that leaves were the most frequently used 31.93%, bark (19.33%), fruit (12.61%), seed (10.92%) and the root (10.08%). The preponderance usage of leaves could be as a result of their rapid ability to regenerate [19] and availability. *Adia et al.* [20] asserted that the activities of leaves during photosynthesis and biosynthesis enhance the production of maximum bioactive substances. These parts are collected at different seasons and stages of

tree growth and prepared for medication in varying forms (juice, paste, decoctions etc.). The health disorders recorded in the study were grouped into different categories which include gastro-intestinal disorders; dermatological disorders and cosmetics; respiratory diseases; fevers; urogenital problems; ear, nose and throat problems; oral and dental disorders; mental disorders; Musculoskeletal pain and swelling; cardiovascular disorder and others (Table IV). According to the [21] classification, one (1) vulnerable tree species - *Delonix regia* (Hook) Raf (Fabaceae) was encountered and documented in this study. This may be due to the indiscriminate felling of trees as most of the identified species were found around the residential homes. Trees aids in the reduction of temperature, air and noise pollution; recycling of oxygen and water, absorption of greenhouse gases, carbon sequestration as well as making several impacts on the social, economic, cultural, and health facets of people globally. As a complex ecosystem, any changes in its functionality at any level results in an altered structure, species abundance (fauna and flora) and their interactions. Studies have shown the need for trees not only in meeting the health needs of people but in maintaining a balanced physiological and psychological effects especially as regards depression reduction, and nervousness and stress management [22] - [23]. Trees are wonderful gifts of nature to help man meet his daily needs and therefore require all necessary care and attention.

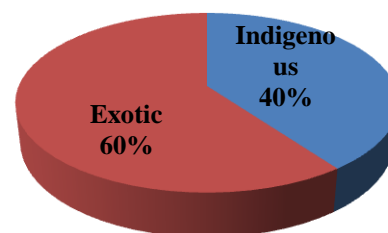


Fig. 2: Origin of tree species in Chukwuemeka Odumegwu Ojukwu University, Igbaram Campus.

TABLE II: CHECKLIST OF ETHNO-MEDICO-BOTANICAL TREE SPECIES AND THEIR CHARACTERISTICS

Species	Family	Common Name	Native name	Origin	Habit	Ecological status
<i>Anacardium occidentale</i> De Wild.	Anacardiaceae	Cashew	cashu	Exotic	Tree	LC
<i>Annona muricata</i> L.	Annonaceae	Sour sop	Uburu ocha	Exotic	Tree	LC+
<i>Anthocleista djalonensis</i> A. Chev.	Gentianaceae	Cabbage tree	Akpakoro	indigenous	Tree	NA
<i>Araucaria heterophylla</i> Juss (Salisb)	Araucariaceae	Norfolk pine	-	Exotic	Tree	NA
<i>Artocarpus heterophyllus</i> Lam.	Moraceae	Jack fruit	Ukwa oyibo	Exotic	Tree	LC
<i>Averrhoa carambola</i> L.	Oxalidaaceae	Star fruit		Exotic	Tree	NA
<i>Azadirachta indica</i> A Juss	Meliaceae	Neem	Eke oyibo	Exotic	Tree	LC
<i>Bambusa vulgaris</i> Schrad. ex J.C. Wendl	Poaceae	bamboo	Otosi	Exotic	Tree-like grass	NA
<i>Borrassus aethiopum</i> Mart	Arecaceae	African fan palm	Akupe/ osisi akufe	Indigenous	Tree	NA
<i>Canarium schweinfurthi</i> Engl.	Burseraseae	African olive/African elemi	Ube mgba/ube osa	Indigenous	Tree	LC

<i>Carica papaya</i> L.	Caricaceae	Paw-paw	Okwuru oru	Exotic	Shrub	LC
<i>Casuarina equisetifolia</i> L.	Casuarinaceae	Whistling pine	-	Exotic	Tree	NA
<i>Ceiba pentandra</i> (L.) Gaertn	Malvaceae	Kapok/Silk cotton	Akpu-ogwu	Indigenous	Tree	LC+
<i>Chrysophyllum albidum</i> G. Don	Sapotaceae	African star apple	Udara	Indigenous	Tree	LC+
<i>Citrus sinensis</i> Osbeck	Rutaceae	Sweet orange	Oroma	Exotic	Tree	LC
<i>Citrus grandis</i> (L.) Osbeck	Rutaceae	Pomelo	-	Exotic	Tree	LC
<i>Citrus paradisi</i> Macfad.	Rutaceae	Grape fruit	-	Exotic	Tree	LC
<i>Cocos nucifera</i> G. Don	Arecaceae	Coconut	Aki bekee/aki oyibo	Exotic	Tree	LC
<i>Dacryodes edulis</i> (G. Don.) H. J. Lam	Burseraceae	African pear	Ube	Indigenous	Tree	LC
<i>Delonix regia</i> (Hook) Raf	Fabaceae	Flame of the forest	Osisi na-enwu oku	Exotic	Tree	VU
<i>Dialium guineense</i> Willd	Fabaceae	Black velvet tamarind	Icheku/cheleku	Indigenous	Tree	LC
<i>Elaeis guineensis</i> Jacq	Arecaceae	Palm tree	Nkwu	Indigenous	Tree	LC
<i>Eucalyptus camaldulensis</i> Dehnh.	Myrtaceae	River red gum tree	-	Exotic	Tree	NA
<i>Eucalyptus globulus</i> Labill	Myrtaceae	Blue gum tree	-	Exotic	Tree	NA
<i>Ficus capensis</i> Thunb.	Moraceae	Bush fig	-	Exotic	Tree	LC
<i>Ficus exasperata</i> Vahl	Moraceae	Sand paper tree	-	Exotic	Tree	LC
<i>Gmelina arborea</i> Roxb.	Anacardiaceae	White teak /Gmelina	Ose oyibo / melaina	Exotic	Tree	LC
<i>Holarrhena floribunda</i> G. Don	Apocynaceae	False rubber tree	-	Indigenous	Tree	LC
<i>Irvingia gabonensis</i> (Aubry-Lecomte ex O'Rorke) Lanen	Irvingiaceae	Dika nut	Ogbono/ugiri	Indigenous	Tree	LC
<i>Mangifera indica</i> L.	Anacardiaceae	Mango	mangoro	Exotic	Tree	LC
<i>Morinda lucida</i> Benth	Rubiaceae	Brimstone tree	Eze-ogu	Indigenous	Tree	LC
<i>Moringa oleifera</i>	Moringaceae	Moringa/drumstick tree	Okwe oyibo	Exotic	Tree	NA
<i>Newbouldia laevis</i> (P. Beauv) Seaman ex Bureau	Bignoniaceae	Fertility tree	Ogirisi	Indigenous	Tree	LC
<i>Pentaclethra macrophylla</i>	Fabaceae	African oil bean	Ugba/ukpaka	Indigenous	Tree	LC
<i>Persea americana</i> Mill	Myrtaceae	Avocado	Ube oyibo	Exotic	Tree	LC
<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Masquarede tree	Osis mmanwu	Exotic	Tree	NA
<i>Psidium guajava</i> L.	Myrtaceae	Guava	Gova	Exotic	Shrub	LC
<i>Pterocarpus mildraedii</i> (Harms)	Fabaceae	African rosewood	Oha	Indigenous	Tree	LC
<i>Roystonea regia</i> (Kunth) O.F. Cook	Arecaceae	Royal palm	-	Exotic	Tree	LC
<i>Tectona grandis</i> L.	Verbenaceae	Teak	-	Exotic	Tree	LC+
<i>Terminalia catappa</i> L.	Combretaceae	Almond	Furutu	Indigenous	Tree	LC
<i>Terminalia mantaly</i> L.	Combretaceae	Step tree	-	Exotic	Tree	NA
<i>Tetrapleura tetraptera</i> (Schumac and Thons) Taub	Fabaceae	Aridan	Okpikirikpo	Indigenous	Tree	LC
<i>Treculia africana</i> Decne	Moraceae	African bread fruit	Ukwa	Indigenous	Tree	LC+
<i>Vitex doniana</i> Sweet	Lamiaceae	Black plum	Ejiji	Indigenous	Tree	NA

Keys: VU – Vulnerable, LC – Least Concerned, EN – Endangered, NA – Not Assessed, NT – Near Threatened, + Protected by CITES

TABLE III: ETHNO-MEDICO-BOTANICAL USES OF TREES IN CHUKWUEMEKA ODUMEGWU OJUKWU UNIVERSITY, IGBARIAM CAMPUS.

Species	Medicinal Uses	Part Used	Number of species	Frequency (%)
<i>Anarcadium occidentale</i> De Wild.	Leaf decoction for diarrhea [24] asthma, headache, wounds [25] Stomach ache [9]	Leaf, Fruit, Bark	8	1.15
<i>Annona muricata</i> L.	Lessen effect of cancer Diabetes [26]	Leaf, Fruits	26	3.73
<i>Anthocleista djalonenensis</i> A. Chev.	Pain killer, antidiabetic, antibacterial, regulate menstruation, leprosy, venereal diseases, scrotal elephantiasis	Leaf, root, bark	13	1.88

<i>Araucaria heterophylla</i> Juss (Salisb)	Toothache, extracting teeth , anti-inflammatory [27]	Aerial part	11	1.58
<i>Artocarpus heterophyllus</i> Lam.	Asthma, prevent ringworm and heal feet cracking, diabetes, gall stone [28]	Latex, leaf, bark	1	0.14
<i>Averrhoa carambola</i> L.	Treating constipation, fever, skin diseases, high blood pressure and diabetes, Rheumatism, Cough Asthma, jaundice and colic.	Fruit, leaf, flower and seed	1	0.14
<i>Azadirachta indica</i> A Juss	Yellow fever [9], [29], blood purification to balance sugar level, Treating scabies, Tooth problems, fast healing of wounds [30] poison bites, stomachache [25]	Leaf, Tender shoot, stem bark	3	0.43
<i>Bambusa vulgaris</i> Schrad. ex J.C. Wendl	Abortifacents, male contraceptives [26]	Leaf	23 clusters	3.30
<i>Borrassia aethiopum</i> Mart	Treating swollen testis and infertility [31]	Fruit, leaf, root	4	0.57
<i>Canarium schweinfurthi</i> Engl.	Anemia, diarrhea, rheumatism, roundworms, toothache, malaria, fever, gastro-intestinal disorder, sexually transmitted diseases and helminthes [32]	Root, bark, seed, leaf, flower	3	0.43
<i>Carica papaya</i> L.	Malaria, gonorrhoea, diabetes, dysentery [29] slimming, gastric hyperacidity, toothache, constipation; dysentery [24], [30]	Fruit, leaf, latex	8	1.15
<i>Casuarina equisetifolia</i> L.	Teeth strengthening [24] Treating beriberi, stomachache, swelling and toothache, bloody diarrhea [1]	Fruit, bark and wood, Seed	1	0.14
<i>Ceiba pentandra</i> (L.) Gaertn	Diarrhea [9], Diarrhea and dysentery, treating toothache and mouth problems, stomach problems, hernia, gonorrhea and heart trouble [1]	Leaf, root, stem bark	3	0.43
<i>Chrysophyllum albidum</i> G. Don	Stomach upset, healing wound, fibroid, malaria, diarrhea and yellow fever [33]	Fruit, bark, seed, bark, root	1	0.14
<i>Citrus sinensis</i> Osbeck	Cough, ringworm and malaria [26]	Leaf	40	5.74
<i>Citrus grandis</i> (L.) Osbeck	Stomachache [24]	Fruit flesh	3	0.43
<i>Citrus paradisi</i> Macfad.	Cough and malaria [26]	Fruit, leaf	2	0.29
<i>Cocos nucifera</i> G. Don	Measles, hair growth and darkening, smoothen skin, bowel movement, cuts/wound healing [24]	Juice, Fruit pulp (oil, milk), shell (burnt ash)	4	0.57
<i>Dacryodes edulis</i> (G. Don.) H. J. Lam	Treating wound, skin diseases, dysentery and fever	Leaf, fruit, seed, bark	5	0.72
<i>Delonix regia</i> (Hook) Raf	Anthelmintic [26] constipation, arthritis, fever, pain and ear ache	Leaf, flower, seed	15	2.15
<i>Dialium guineense</i> Willd	Anti-diuretic, anti-cancer [34]	Stem, Root, Bark	2	0.29
<i>Elaeis guineensis</i> Jacq	Malaria [26], treating stomach disorder [35], menorrhagia, bronchitis, headache and gonorrhoea [36]	Palm heart, fruit, leaf	147	21.09
<i>Eucalyptus camaldulensis</i> Dehnh.	Fever [9] Sore throat [26]	Leaf, Gum	9	1.29
<i>Eucalyptus globulus</i> Labill	Mouth wash, nasal congestion, wounds, antibacterial [29]	Leaf	2	0.29
<i>Ficus capensis</i> Thunb.	Blood tonic and immune booster, treating chest pain, toothache and epilepsy [37]	Leaf, Stem bark	2	0.29
<i>Ficus exasperata</i> Vahl	Wound healing, bleeding, epilepsy, high blood pressure, rheumatism, arthritis, intestinal pains, colics, ringworm and boosts female fertility	Leaf	9	1.29
<i>Gmelina arborea</i> Roxb.	Anti-diuretic, anti-cancer, anti-diabetic, treatment of bone fracture [38]	Leaf, stem, bark	121	17.36
<i>Holarhena floribunda</i> G. Don	Gonorrhoea, dysentery, jaundice, malaria and snake bite [39]	Bark, leaf, whole plant	3	0.43
<i>Irvingia gabonensis</i> (Aubry-Lecomte ex O'Rorke) Lanen	Weight loss, high cholesterol, diabetes, gastrointestinal and liver conditions, hernias and urethral discharge.	Seed, bark	6	0.86
<i>Mangifera indica</i> L.	Body pain and delivery pain [25] Malaria, diarrhea, diabetes, astringent swollen gums [24] applied on gums to cure pyorrhea [1]	Stem, bark, leaf, root, latex	53	7.60
<i>Morinda lucida</i> Benth	Fever [40]	Leaf	4	0.57
<i>Moringa oleifera</i>	Increase sperm production [25] Asthma, arthritis, rheumatism [29] swollen breasts, constipation promote contraction of uterus in child birth, [24] high blood pressure [1]	Flower, leaf, seed, root	7	1.00
<i>Newbouldia laevis</i> (P. Beauv) Seaman ex Bureau	Treatment of asthma [40], [13], tooth and stomach ache, pains, skin infection, diabetes, tumor, hypertension, malaria and sickle	Leaf, stem, root	17	2.44

	cell anaemia, [41] elephantiasis, convulsion			
<i>Pentaclethra macrophylla</i>	Treatment of infertility, lactogenity, convulsion, abortion and wounds [42]	Stem, Leaf, Pod, Seed, Bark	3	0.43
<i>Persea americana</i> Mill	Hypertension [26]	Leaf, root	3	0.43
<i>Polyalthia longifolia</i> Sonn.	Treating helminthiasis, fever, diabetes and cardiac problems.	Leaf, fruit, bark	76	10.91
<i>Psidium guajava</i> L.	Fever [9] morning sickness, healing sores, diarrhea [24]	Leaf, Stem bark	6	0.86
<i>Pteracarpus mildraedii</i> (Harms)	Diarrhea, dysentery, antioxidant	Flower, stem bark, leaf	2	0.29
<i>Roystonea regia</i> (Kunth) O.F. Cook	Diuretic and treating diabetes [43]	Seed, leaf, root, bark	4	0.57
<i>Tectona grandis</i> L.	Hair loss, dandruff [25] diabetes, menstrual problems and haemorrhage, sore throats, intestinal parasites, swollen eyelids, acute dermatitis and other skin irritation, diuretic and stimulate hair growth [1]	Seed (oil), Bark, leaf, flower	11	1.58
<i>Terminalia catappa</i> L.	Boiled for malaria [26]	Leaf	2	0.29
<i>Terminalia mantaly</i> L.	Hypertension, diabetes, gastroenteritis, oral, dental, cutaneous and genital infections [44]	Bark, leaf	27	3.87
<i>Tetrapleura tetraptera</i> (Schumac and Thons) Taub	Sickle cell [40]	Fruit	1	0.14
<i>Treculia africana</i> Decne	Heart problem [40]	Leaf	2	0.29
<i>Vitex doniana</i> Sweet	Leaf sap used as eye drop to cure conjunctivitis, treating headache, fever, measles, chickenpox, jaundice, leprosy, liver disease, kidney, stomach problems and reduce bleeding after birth.	Leaf, bark, twig, root, fruit	3	0.43
		Total	697	100

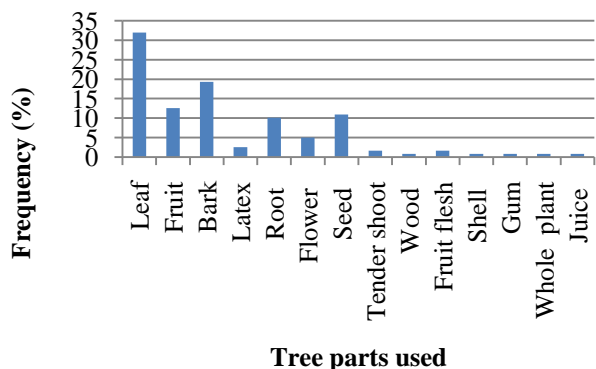


Fig. 3: Tree parts used for the management of various healthcare problems



Fig. 4: Harvested farmland in COOU, Igbariam campus

TABLE IV: HEALTH DISORDER CATEGORIES WITHIN THE STUDY AREA.

Health disorder category	Ailments
Gastro-intestinal disorders	Constipation, diarrhea, piles, dysentery, stomachache, loss of appetite, intestinal worms, colic pain,
Dermatological disorders and cosmetics	Cut, wounds, scabies, boils, leprosy, ringworm, skin diseases, ectoparasites, body inflammations hair problems,
Respiratory diseases	Common cold, cough, asthma, bronchitis, chest pain, lung disorders
Fevers	Ordinary fever, diaphoretic malaria, typhoid, yellow fever
Urogenital problems	Sexual disability, infertility, leucorrhoea, gonorrhea, menstrual disorders, frequent urination, diuretic, aphrodisiac, abortion
Ear, Nose, Throat problems	Ear ache, nose bleeding, sore throat
Oral and dental disorders	Toothache, mouth sore, pyorrhea
Mental disorders	Mental tonic, memory tonic, epilepsy, convulsion
Musculoskeletal pain and swelling	Body ache, muscular pain, sprain, strain, rheumatism, arthritis, head ache, joint pain, swelling
Cardio-vascular disorder	Cardiac, blood pressure/hypertension
Other	Fracture, tonic, lactation, easy delivery, tumor, diabetes, cooling agent, stimulant and eye problems

IV. CONCLUSION

The study has identified and given a detailed documentation of trees with ethno-medic-botanical values that cuts across several health disorders and also underscored the

prevalent human activities affecting the vegetation within the study area. Majority of the trees identified were exotic with *E. guineensis* having the highest frequency and others with extremely low frequency calls for immediate tree planting and conservation within the area. This could be in form of avenue planting for shade and beautification of the university landscape, establishment of botanical gardens and tree plantations.

ACKNOWLEDGMENT

Authors are grateful to the Department of Forestry and Wildlife Management, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus, Anambra State, Nigeria for their support towards the actualization and completion of this study.

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