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Ethnobotany of Okomu Forest Reserve, Edo State, Nigeria

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ABSTRACT: An ethnobotanical survey of useful plants was conducted in Okomu forest reserve, with a view to documenting indigenous knowledge of medicinal plants used by the inhabitants of the communities and enclaves around the reserve. Information were obtainedfrom 106 structurally designed questionnaires, which were administered to different individuals and thereafter analysed using descriptive statistics. A total of 90 angiosperm species in belonging to 45 families were identified to be useful in the management of various ailments within the study area. Euphorbiaceae and the Legumes constituted the highest species occurrence while the largest number of plant families (22) had only one species each represented. Further findings showed that the leaves and stem bark are the most useful parts of the plants while the flower and pith were the least useful. In general, the trees were the most useful of all plant habits followed by the herbs and the shrubs. While this work reflects the biodiversity richness of the study area and its environs, it also suggests the enforcement of conservation strategies as a measure to mitigate species loss.

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Herbal medicine is practised in many countries including Nigeria. A survey conducted in old Oyo State revealed that traditional medicine blends readily into the socio-cultural life of the people, in whose culture it is deeply rooted (Sofowora, 1993). Cunningham (1993) and WHO (2003) noted that the reliance on medicinal plants is partly owing to the high cost of modern drugs, inaccessibility of modern health institutions and due to cultural acceptability of the system. However, as time went on, the traditional knowledge about useful plants in many countries are gradually being depleted for reasons mainly attributed to environmental degradation and deforestation. Sood *et al.,* (2001) also opined that a great deal of information about the traditional uses of plants is still intact with tribal peoples, but the native healers are often reluctant to accurately share their knowledge to outsiders. Another study by UNCTAD/Gatt (1974) had earlier shown that 60% of medicinal products are derived from plants (including microbes). Indeed, Nigeria has a great deal of flora diversity which are yet to be explored. Most Nigerian urban dwellers, due to changes imposed by modern life on social structures and attitudes, reject the efficacies of traditional medicine. However, Olapade and Bakare (1992) earlier noted that the prevailing economic recession in the country has forced large number of the populace to accepttraditional medicine because of the high cost of orthodox drugs. This has also increased the cost of herbal plants coupled with the high rate of deforestation, thereby making these plants almost unavailable. Okomu Forest Reserve is particularly rich in biodiversity. The wildlife sanctuary occupies the core of the reserve which was previously being managed by Nigerian Conversation Foundation (NCF), but now by the National Park Services. Fortunately, the Wildlife Sanctuary encloses the Permanent Sample Plot (PSP) of Forestry Research Institute of Nigeria (FRIN). The Wildlife Sanctuary is the safest part of the reserve at present because of mounting pressures by illegal timber extraction, the proposed Mitchelin Rubber Plantation, Iyayi Rubber Plantation and the Okomu Oil Palm Plantatiion on the remaining part of the reserve. This study centres on the ethnobotany of this important Forest Reserve with emphasis on ethno-medicine, as practiced by the communities around the Forest Reserve.

MATERIALS AND METHODS

*Study area:*The study area is located in Edo state and lies between latitude 6° N and 6°10'N, and longitudes 5°E and 5°30'E (Figure 1). It is about 50 km West of Benin City and bounded by rivers Siluko and Osse to the west and east respectively. The region consists of a sandy coastal plain generally bellow 400 m above sea level (Udo, 1990, Soladoye *et al.,* 1993). It is also characterized by tropical climate with a mean annual rainfall of about 2100 mm, mean temperature of about

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30.2ºC, and a high relative humidity which is less than 65% during the afternoon throughout the year (Soladoye *et al.,* 1993).

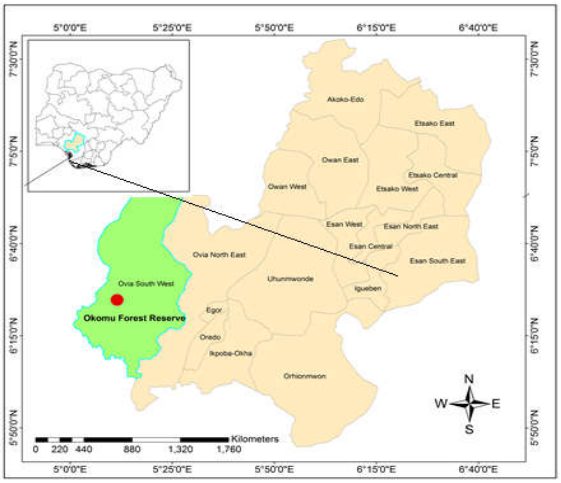

Fig 1. Map of Edo state showing the study area

*Collection and identification of species***:** Fourteen out of twenty-four communities/enclaves were sampled for this study based on their proximity to Okomu Forest Reserve. These were Iguobauwa, Udo, Ofunama, A.T. & P Camp, Siluko, Iguomwan, Irhuebor, Mile 3, Arakwan, Nikrowa, Ugbo, Etete, Ugolo, and Ikoka. Information were gathered with the aid of structurally designed questionnaires, to various individuals who are knowledgeable about the useful plants within the study area. The questionnaires were administered to a total of 106 respondents, through oral interview and their responses were carefully marked. Plants species reported were collected from the Permanent Sample Plot (PSP) of the Forestry Research Institute of Nigeria (FRIN), fallow farmland and Agroforestry Plots where other areas of research investigations were carried out during this study. Repeated visits were made to the communities/enclaves of the reserve, the first point of call being the head of each community/enclave around the reserve known as "Ojionwele". In most cases, the other community council members were intimated with the aims and objectives of our investigation before we went about the community interviewing different individuals with indigenous knowledge about medicinal plants and their uses, especially the elderly ones (Table 1).

The collected plants were also displayed to allow interested people of all ages to participate in our investigation. Nonetheless, all plant species were collected and identified at the Forest Herbarium Ibadan (FHI), listed in Holmgren *et al.,* (1990). The information on the uses and local names of the plants were gathered and adequately presented in Table 2.

Table 1. Summary of respondents according to their age groups

	Categories				
Age groups	**Aged couples**	**Herbalists**	**Herb sellers**	**Others**	**Total**
26-30	-	1	-	-	1
31-35	-	-	3	3	6
36-40	1	2	6	4	13
41-45	13	6	5	16	40
45 and above	22	9	13	2	46
Total	36	18	27	25	**106**
%	34.0	17.0	25.5	23.6	

RESULTS AND DISCUSSION

A total of 90 species belonging to 44 families were obtained from the survey. Only one family had 7 species, one had 5 species, four families had 4 species each, six families had 3 species each, eleven families had 2 species each, while the remaining twenty-two families had 1 species represented each. In general, Euphorbiaceae had the highest number of species represented (7.8%), followed by Ceasalpinioideae (5.6%). However, the Legumes (Caesalpinioideae, Mimosoideae and Papilionioideae) comprised 12.2% of the total species (Table 3). The various uses of these plants and the parts used are shown in Figure 1 and 2 respectively. The medicinal uses scored highest with about 45%, followed by fuel wood 37%, while timber constituted 7%. The leaves were mostly used and were readily available than other plant parts. The occurrence of plant habits in the four land used forms are also shown in Fig. 3. Generally, trees recorded the highest number of species, followed by herbs. Nonetheless, this does not necessarily mean that the population of trees is the highest in all the land used forms but this is in relation to the available ethnobotanical information. Further results on Figs 4 shows the percentage occurrence of the different plant habits in the land used types. This revealed that PSP had the highest number of trees, while shrubs were more in Agroforestry, and the herbs were the same for both Agroforestry and fallow land respectively. The implication of these results is that each of the land used types could meet the needs of the people without much pressure on the PSP. In reality, there was low ethnobotanical knowledge of plants that were strictly from PSP, though some of them were on sale and were mostly used by the full time herbalists.A total of 106 persons were interviewed (Table 1) and most of the respondents were above 45 years of age. The Aged couples constituted the highest number of the total respondents (34%), while the herbalists had the least (17%). This small number of herbalists is attributed to the fact that many of them require incentives before they can be willing to divulge useful information

regarding the medicinal uses of these plants. The herb sellers in contrast were willing to provide some information since they knew it will promote their trade.

Table 2. Some Plants Ethnobotanical Significance at Okomu Forest Reserve

No	Botanical Names	Local Names (Benin/Eshan)	Family	Ailment/other uses	Part used	Preparation
1.	*Aframomum melegueta K.* Schum (Ho) (H)	Unema, ehieado (B) Asin-edo (ES)	Zingiberaceae	(a) Pepper soup (b) Additives	(a) seeds (b) seed	(a) Dried seeds grind together with bark of *Drypetes chevalieri* and cooked as pepper soup, fish and beans added, for newly delivered woman for womb healing (b) The seeds added to several medicine preparations.
2.	*Ageratum conyzoides* L. (H)	Ebighoedore (B)	Asteraceae (Compositae)	Eye-disease	Leaves	The leaves squeezed and the liquid dropped into the eye.
3.	*Albizia zygia* (DC) J.F. Macbr (AF) (T)	Owewe Ekpaghudo (B)	Leguminosae - Minosoideae	(a) Cold in children (b)increase saliva	(a) Leaves (b) Stick/wig	(a) Leaves ground with *Piper guineense*, boiled and stem inhaled and liquid drunk. (b) The stick is chewed to increase saliva production.
4.	*Alchornea cordifolia* (Schum& Thorn.) Muell. Arg. (AF) (S)	Uwonwen (B)	Euphorbiaceae	(a)Dysentry, Stomach trouble (b) Athletic foot	(a) Leaves (b) Leaves	(a) The leaves boiled and the liquid drunk. (b) The leaves and those of *Jatropha curcas* ground and applied to the affected areas.
5.	*Alchornea laxiflora* (Benth.) Pax& K. Haffn. (S)		Euphorbiaceae	Hermorrhoids (Pile)	Root bark	The root bark is ground boiled lightly with an egg of local breed of chicken and eaten.
6.	*Allanblackia floribunda* Oliv (Ho) (T)	Izeni (B)	Guttiferae	Purgative	Fruit	The fruit cooked and eaten as purgative
7.	*Alstonia boone* De wild (AFP) (T)	Uku (B) Ogiegbukhin (ES)	Apocynaceae	(a) Fever (c) Deep cut (d) Timber	Bark (c)Stem latex (d) Stem	(a) The bark is soaked in local gin or palm wine in a bottle for 24 hours to be drunk three times daily. (c) the latex from this stem is mixed with palm oil. Warmed gently and applied to the deep cut for healing. Timber- boxes
8.	*Amphimas pterocarpoides* Harms (AFP) (S/T)	Erhurummensi (B)	Leguminosae - Papilionioideae	(a) Leprosy (b) Timber	(a) Bark (b) Stem	(a) The bark boiled with *Costus afer*for bathing and rubbing the body. (b) timber
9.	*Anchomanes difformis* (Bl.) Engl (Ho) (H)	Olikhoror (B)	Araceae	Eye diseases	Rhizome	The rhizome is grounded enclosed in a place of cloth and then applied into the eyes.
10.	*Anthonotha macrothylla* P. Beauv. (AFP) (S/T)	Oghaba (B)	Leguminosae - Ceasalpinioideae			
11.	*Asystacia ganetica* (Linn.) T. Anders (A) (H)	Ebe-Oghghiro Ovbiakpe (B)	Acanthaceae	Ezcema	Leaves	Squeeze the leaves and rub on the affected part.
12.	*Baphia laurifolia* Baill (F) (T)	Ebe-orhua (ES)	Leguminosae - Papilionioideae	Purgative for children	Leaves	Leaves boiled and the concoction drunk
13.	*Baphia nitida* Lodd (AP) S/T)	Otus (B)	Leguminosae - Papilionioideae	High blood pressure	Leaves	The leaves ground with alligator pepper, then local gin added and applied on incisions made at back of hand and front of chest.
14.	*Barteria fistulosa* Mast (PSP) (T)	Ogeimi (B)	Passifloraceae	Protection against witches and wizards	Leaves	The leaves soaked in water used as sponge to bath every evening protects against witches and wizards
15.	*Boerhavia diffusa* L. (F) (H)		Nyctaginaceae	Anti-abortion	Root	The rood boiled, drunk
16.	*Bridelia ferruginea* Benth. (Ho) (S)	Ogangan (B)	Euphorbiaceae	Stomach trouble	Bark	The bark cooked and the concoction drunk when cold.
17.	*Brillantaisia lamium* (Nees) Benth(H) (Ho)	Ebohohedo (B)	Acanthaceae	Pains during labour	Root	The root is prepared as soup to be taken by a woman under labour to ease delivery against pain

No	Botanical Names	Local Names (Benin/Eshan)	Family	Ailment/other uses	Part used	Preparation
18.	*Bulcholzia coriacea* Engl. (PSP) (T)	Owi (B) Ogui (ES)	Capparaceae	(a) Edible (b)Appendicitis (c) Timber	(a) Fruit (b) Leaves (c) Stem	(a) Fruit cooked for many days for food. (b) Leaves ground, applied on the incision made in the area. (c) Timber
19.	*Cassia spectabilis* DC *(S)*		Leguminosae - Ceasalpinioideae	(a) Ezcema (b) Cough	(a) Leaves (b) Leaves	(a) The leaves squeezed and applied on affected area (b) Leaves grind with salt and licked.
20.	*Cassia tora* L. *(*Ho) (S)	Ihemebieka (B)	Leguminosae - Ceasalpinioideae	Eczema	Leaves	Squeezed and rubbed on affected areas.
21.	*Ceiba pentandra* (Linn.)Gaerth. (Ho) (T)	Okha (B)	Bombaceceae	(a) soap (b) Timber	(a) Bark (b) Stem	(a) Burn the bark of the plant to ashes, filter and then mixed with other things to make soap for washing. Timber-Coffins
22.	*Chromolaena odoratum* (L.) King & Robinson (AF) (S)	Ebe-Awolowo (ES)	Asteraceae (Compositae)	(a) Malaria (b) Haemostaic agent	(b) Branch (b) Leaves	(a) the branches together with other plants e.g. *Azadirachta indica* are boiled and the decoration drunk and also bathed with. (b) the juice of the leaves is applied to a fresh cut to stop bleeding.
23.	*Clerodendron capitatum* (Wild) Schum &Thonn (AFP) (H)		Verbenaceae	(a) Pile (b) Ornamental	(a) Branch (b) Plant	(a) The pith of the branch is cleared to make pipe e.g (smoking pipe). (b) Planted for ornamental purpose.
24.	*Colocasia esculenta* (L.) Schott (FP) (Ho) (H)	Iyokho (B) Lokho (ES)	Araceae	Delivery	(rhizome	The young rhizome is eaten raw by a woman under labour to ease delivery.
25.	*Combretum racemosum* P.Beauv. (AF) (S)	Okoso (B)	Combretaceae	(a) seasoner (b) Tooth ache	(a) Leaves (b) Latex	(a) The leaves are cooked with soup to season it. (b) The latex applied to the affected tooth.
26.	*Costus afer* Ker-Gwal (Ho) (H)	Ukweroha (B)	Zingiberaceae	(a) Sugar cane (b) Washing	(a) Stem (b) Leaves	(a) The stem eaten as sugar cane (b) The leaves used to wash rusted iron.
27.	*Culcasiasexatilis A.* A chev. (FP) (H)		Araceae	Wound	Plant	The plant grounded with alligator pepper and applied in the wound, then bandaged it.
28.	*Cylicodiscus gabunensis* Harms (PSP) (T)	Okan (B)	Leguminosae - Minosoideae	Evil spirit	Leaves	The leaves and those of *Ricinoden dronheudelotii* squeezed and drunk, drives evil spirit away.
29.	*Datura metel* L. (Ho) (H)	Ebe-ahauhi (B) Ebe-arhanmuhen (ES)	Solanaceae	High blood pressure	Plant	Boil the plant together with *Piper guineense* and drunk 2 times daily.
30.	*Dicapyros piscatorial* Gurke (FP) (T)	Isahiame (B)	Ebenaceae	(a)Chewing stick (b)Carving	(a) Twig (b)Wood	(a) The wig is used as chewing stick. (b) The wood is used for carving hoe axe handle and images. (c) Timber.
31.	*Distemonanthus benthamianus* Baill (Ho) (T)	Anyanrthan (B) Ujemenheahen (WS)	Leguminosae - Ceasalpinioideae	Tonic for pregnant women	Bark	The bark and that of C*eltis zenkeri* and seeds of *Aframomum melegueta* ground into powder and then licked weekly.
32.	*Enantia chloranta* Oliv. (AP) (T)	Erenbarhoga (B)	Annonaceae	Fever	Bark	The bark is cut into pieces, soaked in local gin for 24 hours and to be drunk 3 times daily.
33.	*Ficus exasperata*Vahl *(*AF) (S/T)	Ameme (B)	Moraceae	(a) Obesity in children (b)Stop bleeding (c) Stomach trouble (d) Sand paper	(a) Plant (b) Latex (c) Root (d) Leaves	(a) The plant cooked with bamboo is used as bathe (b) The latex applied to fresh cut (c) Root, seed of *Piper guineense* and potash ground together cooked, drunk (d) The leaves used as sand paper to smoothen the surface of rough objects.
34.	*Fleurya aestans* (L.) Gaud. Ex. Miq. (H)	Eben—owuasua (B)	Urticaceae	Bathe	Plant	The leaves are used to bath during serious sickness for healing and comfort.

No	Botanical Names	Local Names (Benin/Eshan)	Family	Ailment/other uses	Part used	Preparation
35.	*Funtumia elastica* (Preuss) Stapf. (PSP) (T)	Araba-obebo Anyon (B)	Apocynaceae	Dysentery	(a)Young leaves	(a) Ground young leaves of *F. elastica*, *Newbouldia laevis* and lime (*Citrus aurantifolia*), one pepper and add salt then prepared as soup to be taken.
36.	*Garcinia kola* Heckel (AP) (M/T)	Edun (B) Odu (ES)	Guttiferae	(a) Cough (b) Edible (c)Timber	(a) Seed (b) Stem	(a) The seed is eaten regularly (b) Edible (c) Timber
37.	*Harungana madagascariensis* Lam. Ex Poir (F) (S/T)	Itue (B)	Hypericaceae	(a) Painting (b) Timber (c) Swollen baby	(a) Leaves (b) Stem (c) Plant	(a) The leaves are ground and rubbed on native pot as paint (b) Timber (c)Plant kept under sun, squeezed in water to bath the baby in a dirty area.
38.	*Hibiscus surattensis* L. (Ho) (S)	Akenye (B)	Malvaceae	Bite	Leaves	The leaves and those of *Acanthus montanus* and *Piper guineense* ground and applied
39.	*Icacina trichantha* Oliv. AFP (S)	Osan (B)	Icacinaceae	(a) Edible (b) Fattening	(a) Fruit (b) Leaves	(a) Fruit eaten (b) The young leaves squeezed and drunk.
40.	*Jatropha curcas* L. (S)	Ukpono (ES)	Euphorbiaceae	(a) stop bleeding (b) tooth ache	(a) Latex (b) Stick or twig	(a) The latex applied on fresh cut (b) the stick chewed as chew-stick daily.
41.	*Jatropha gossypiliflora* L. *(Ho) (S)*	Ukpono (ES)	Euphorbiaceae	Gonorrhea and abortion	Leaves	The leaves boiled with potash and drunk cures gonorrhea and could be used to effect abortion.
42.	*Khaya ivorensis* A. Chev. (PSP) (T)	Ogwango (B) Okpen (ES)	Meliaceae	(a) Malaria (b) Timber	(a) Bark (b) Stem	(a) The bark boiled and drunk (b) Timber – building
43.	*Kigelia Africana* (Lam.) Benth (Ho) (M/T)	Ugbongbon (B) Obon (ES)	Bignoniaceae	(a) chicken pox	Root	The root is boiled, the decoction drunk and used to wash the body with native soup.
44.	*Lecaniodiscus cupaniodes* Planch. Ex. Benth (AFP) (S/T)	Utantan (B)	Sapindaceae	Heart burn	Leaves	The leaves and those of union (*Alium cepa*) squeezed in water, potash added and drunk.
45.	*Maesopsiseminii*Engl. (PSP) (M/T)	Ovbiogekhua (B)	Rhamnaceae	(a) Gonorrhoea (b)Timber	(a) Bark (b) Stem	(a) The bark soaked in line juice for 24 hours and drunk (b) Timber-cabinet work
46.	*Melicia excels* (Welw.) C.C. Berg. (F) (T)	UlokoUnoko (B)	Moraceae	(a)Malaria, Stomach pain (b) Timber	(a) Bark (b) Stem	(a) Bark soaked in water or local gin for 24 hours and drunk before breakfast (b) Timber
47.	*Mezoneuron benthamianum* Baill. (PSP) (C)	Akhuala (ES)	Leguminosae - Ceasalpinioideae	Craw-Craw	Flower and not bark	These are grind together with water and applied to affected part.
48.	*Microdesmis puberula* Hook. F. ex. Planch (AFP) (T)	Apata, Erankpata (B)	Pandaceae	Goat healer	Leaves	The goats eat the leaves when sick
49.	*Millettia aboensis* Hook. f. (Ho) (S/T)	Awo (B)	Leguminosae - Papilionioideae	Ring worm	Leaves	Washed with the leaves in cold water
50.	*Momoradica charantia*L. (C)	Ugbebhe (B)	Cucurbitaceae	Eye disease e.g deworming Apolo	Leaves	Squeezed and liquid into the eyes.
51.	*Musa paradisiaca* L. (Ho) (T)	Oghede (B)	Musaceae	(a) Eye disease e.g. apolo (b) Edible	(a) Pith (b) Fruit	(a0 the juice from the rotten pith is applied to the eyes. (b) Fruit edible when matured.
52.	*Musanga cecropioides* RBr. Ex. Tedlie (F) (T)	Ohoghe (ES) Ogohen (B)	Moraceae	Cough	Latex root	The latex from the root is collected in the evening, mixed with water and drunk.
53.	*Myrianthus arboreus* P. Beauv. (AFP) (S/T)	Ehieghe (B)	Moraceae	(a) vegetable (b) Anti snake (c) Poision	(a) Leaves (b) Root (c) root	(a) The young leaves cooked as vegetable (b) the root ground, remove the surface of the affected part and apply on it, allow part of rest but not in lying position. (c) the root very poisonous for consumption

No	Botanical Names	Local Names (Benin/Eshan)	Family	Ailment/other uses	Part used	Preparation
54.	*Nauclea didierichii* De Wild & Th. Dur. Merrill (T)	Opepe Obliakhe (B)	Rubiaceae	(a) High fever	(a) Bark only (b)Bark & leaves	(a)The bark and seven peper soaked in palm wine and drunk. (b) The bark and leaves boiled with patient sitting, covered with cloth over the pot of steaming concoction.
55.	*Nauclea latifolia* Smith. (Ho) (S)	-	Rubiaceae	Temperature control in children	Leaves	The leaves squeezed in water and drunk. Cool the temperature
56.	*Newbouldia laevis* (P Beauv) Seemann ex Bureau (AF) (T)	Ikhimi (B)	Bignoniaceae	(a) dysentery (b)Heritage Program (c) Boundary (d) Timber	(a) Leaves (b) Branch (c) Plant (d) Stem	(a) Same as the preparation under *Funtumia elastica.* The branch is attached on person's head for authority of inheritance. (c) Plant planted around the plot. (d) Timber – local bridges.
57.	*Ocimum gratissimum* L. (Ho) (S)	Ebe-Alumokho	Lamiaceae (Labiatae)	Cough Spices Stomach Ache	(a) Leaves (b) Leaves (c) Leaves	(a) The leaves squeezed in water and salt added, the drunk. (b) Leaves added to soup as spice (c) Leaves prepared as pepper soup and eaten.
58.	*Ongokea gore* (Hua) Pierre (Ho) (T)	Ekuso (B)	Olacaceae	(a)Stomach upset (b) Timber	(a) Bark (b) Stem	(a) Bark soaked in water for 24 hours, half a spoon drunk by children and full spoon (table spoon) by adult. (b) Timber-Carpentry
59.	*Palisota hirsute* (Thunb.) Scheum (AFP) (H)	Igheguewe (B)	Commelinaceae	Malaria	Plant	The plant boiled with *Costusafer*, the decoction drunk
60.	*Peterisanthus macrocarpus* (P. Beauv) Liben	Olowe (B)	Lecythidaceae	Cough	Bark or leaves	The bark or leaves soaked in water for 24 hours, and salt added and drunk 3 time daily.
61.	*Petivera alliaceae* L. *(AF) (H)*		Phytolaccaceae	Madness and poison	Leaves	The leaves squeezed together with *Okoubaka aubrevillei* in water, drunk 3 times daily cures madness or a poisoned person.
62.	*Phyllanthus muellerianus* (O. Ktze) Exell (AF) (H)	Iyekeebezupe. Asujin (B)	Euphorbiaceae	(a)Stomach trouble (b) Stop stolling	(a) Root	(a) The root ground and drunk 3 times daily (b)The leaves when eaten with 7 alligator pepper (*Aframomum melegueta*) stops frequent stooling.
63.	*Piper guineense* Schum *(PSP) (C)*	Ebe-ahanbi (B) Usita (ES)	Piperaceae	(a) New born woman (b) Additives	(a) Leaves and seeds (b) Seeds	(a) The leaves and seed prepared as soup for a woman who has just delivered to heal the womb. (b) The seeds serve as additives to various medicine preparations.
64.	*Piper umbellatum* L. (F) (S)	Ebe-ahauhi (B) Ebe-arhanmuhen (ES)	Piperaceae	(a) Edible (b) Rheumatism	(a) Leaves (b) Root	(a) Edible as soup (b) the root soaked in local gin and drunk
65.	*Pycnanthus angolensis* (Welw.) Warb. (FP) (T)	Umukhion (B)	Myristicaceae	(a) sore throat (b) Timber	(a) latex (b) Stem	(a) The Latex diluted with water and drunk. (b) Timber-plywood
66.	*Rauvolfia vomitora* Afzel	Akata (B)	Apocynaceae	Infertility	Root bark	Ground root bark with 2 pepper, crayfish and salt. Then cooked as soup but with oil. Then taken. It purges within 2-4 hours thereafter.
67.	*Ricinodendron heudelotii* (Baill) Heckel Subsp. *africanum* (Muell. Arg.) J. Leonard (A) (T)	Okhuen (B)	Euphorbiaceae	Stop bleeding and for curing	Leaves	The leaves wrapped in bigger leaves and warmed in hot ashes, the applied on fresh cut for stopping bleeding and cured
68.	*Scoparia dulcis* L. (Ho) (H)		Scrophulariaceae	(a) Piles (b) Luck	(a) Plant (b) Plant	(a) The plant squeezed in water and drunk. (b) The plant ground, mixed with powder, declare your dire on it and eat.
69.	*Secamone afzelii* (Schultes) K. Schum (F) (C)	Ede (B)	Asclepiadaceae	Galactogogue	leaves	The leaves squeezed in water and drunk and also applied on the breasts for one month.
70.	*Sida acuta* Burm f. (F) (H)	Ujiohaebho (ES)	Malvaceae	Wound ulcer	Leaves	Leaves ground, mixed with oil and applied

No	Botanical Names	Local Names (Benin/Eshan)	Family	Ailment/other uses	Part used	Preparation
71.	*Sida garckeana* Polakowsky (F) (H)	Ujiohaebho (ES)	Malvaceae	(a)Sperm production	(a) leaves	(a) Leaves squeezed in water filtered and *Xylopia aethiopica* soaked in it, drunk 3 times daily
				(b) Yellow fever	(b) leaves	(b) Leaves squeezed in water and drunk.
72.	*Solanum torvum* Sw. (AF) (H)	Oriwo-eni (ES)	Solanaceae	Swollen wound	Seed	The seeds grind and applied on swollen part
73.	*Solenotemon monostachyus* (P.Beauv.) Briq.		Lamiaceae (Labiatae)	Worm/expellant	Leaves	Squeezed the leaves in water and drunk.
74.	*Spathodea campanulata* P. Beauv. (H) (M/T)	Owewe (B)	Bignoniaceae	High fever	Leaves	The patient is made to sit, covering himself with a cloth over a pot of steaming concoction of the leaves. The concoction is drunk too.
75.	*Sphenocentrum jollyamum* Pierre	Obalabi Obanabe (B)	Menispermaceae	Dysentery, Sex stimulant	Root	Root chewed with seeds of *Afromomum melegueta*
76.	*Spondias mombin* L. (Ho) (M/T)	Okhighan (B)	Acanthaceae	(a) Stomach ache	(a) Bark	(a) Bark grounded to make pepper soup for a woman who has just delivered for stomach ache (b) Prepare as above but for treating anybody with pneumonia.
77.	*Stachytarpheta cayennensis* (L.C. Rich.) Shau (Ho) (H)		Verbenaceae	Malaria	Plant	The plant cooked with *Xylopia aethiopica* drunk and used to bath too
78.	*Sterculia tragacantha* Lindl. (AF)	Oporipor, Okoko (B) AKpa (ES)	Sterculiaceae	Soup	Leaves	The young leaves serve as vegetable in soup.
79.	*Syncilisia scabrida* Miers (AF) (L)	Ugwa-Khe, Ikpoluku (B)	Menispermaceae	Fatness in children	Leaves	7 leaves ground with native soap and used as bathe but must not touch the head
80.	*Synedrella nodiflora* Gaerth. (H)	Emiesu (ES)	Asteraceae (Compositae)	Wound ulcer	Leaves	The paste of the ground leaves is applied to the affected part twice daily after cleaning with warm water.
81.	*Tabernaemontana pachysiphon* Stapf (AFP S/T)	Ibu (B) Udekodeneghule (ES)	Apocynaceae	Hypertension	Latex	The latex is mixed with palm kernel oil. Then a spoonful taken every morning
82.	*Terminalia superba* Engl. & Diels (AP) (T)	Eghoin-nofua (B)	Combretaceae	(a) Malaria	(b) Bark	(a) The bark and that of *Amphimas pterocarpioides* are thoroughly boiled, the decoction drunk 3 times daily.
				(b) timber	(b) Stem	(b) Timber-joinery.
83.	*Trema orientalis* (L.) Blume (AF) (S/T)	Ohiwe (ES)	Ulmaceae	Cough	Leaves	The leaves are squeezed, mixed with lemon orange juice and drunk
84.	*Trichilia monadelpha* (Thann.) J. J. De. Wilde (FP) (S/T)	Oyallo (B)	Meliaceae	(a) Malaria; Veneral diseases	(a) Bark	(a) The bark, root of *Synclisia scabrida* and seeds of *Piper guineense* soaked inside local gin for 24 hours and drunk 3 time daily.
				(b)poison expellant	(b) Bark	(b) The bark cooked and drunk will expel the poison in the body
85.	*Trichilia prieureana* A. Juss. subsp. p*rieuriana* (PSP) (T)	Eghogho (B)	Meliaceae	(a) Swollen leg (b) Charcoal	Leaves (b) Stem	(a) The leaves enclosed in larger leaves are heated or warmed in hot ashes and applied on the leg. (b) Charcoal
86.	*Vernonia amygdalina* Del. (A) (S)	Oriwo (B)	Asteraceae (Compositae)	(a) Soup (b)Stomach trouble. (c) Convulsion	(a) Leaves (b) Leaves (c) Leaves	(a) Leaves prepared as soup (b) Leaves squeezed into water and salt added, then the liquid drunk. (c) The leaves and gun powder cooked together and eaten.
87.	*Xylopia aethiopica* (Dunal*)* A Rich (Ho) (T)	Unien (B)	Annonaceae	Spices	Fruit	The fruit is used as species for pepper soup and most herbal preparation (Medicine)
88.	*Zanthoxylum gilletii* (De Wild.) Waterman (PSP) (T)	Okor (B)	Rutaceae	(a) Rheumatism (b)Anti-miscarriage	(a) Root bark (b)Bark	(a) Root bark ground, salt added and applied on affected part. (b) ground bark and *Piper guineense* seeds cooked and taken

No	Botanical Names	Local Names (Benin/Eshan)	Family	Ailment/other uses	Part used	Preparation
89.	*Zanthoxylum zanthoxyloides* (Lam.) Zapern &Timler (Ho) (T)	Ugbanghan (B)	Rutaceae	Infertility	Root bark	The root bark grind with two pepper and crayfish, salt added and cooked but no oil, eaten. It purges within 2-4 hours.
90.	*Zingiber officinale* Rocs. (Ho) (H)		Zingiberaceae	Malaria	Leaves	Used as additive in medicine preparation for malaria.

Key:*AF-Agroforestry Plot/Fallow Land Plot, AFP-Agroforestry Plot/Fallow Land Plot/Permanent Sample Plots, C- Climber, FP- Fallow Land Plot/Permanent Sample Plots, Ho- Homestead, H- Herb, PSP- Permanent Sample Plots, S/T - Small Tree*

Local names*: B- Benin, ES-Eshan*

Obviously, the Okomu Forest Reserve is a great economic asset to the Edo State Government, Ovia South West Local Government, some private entrepreneurs and the residents of the communities within and around the reserve. According to Famuyide *et al.,* (1996), 63.33% inhabitants affirmed that the forest is of immense benefit to the survival of the people. Benefits derived include food items, fuelwood, fruits, vegetable leaves, chewing sticks, medicinal plants etc. the monthly quantity estimates of four major products include fuelwood (42.351kg), wildlife (53,900kg), leaves (2,798kg), snails (1452 units) and other food farm products amounting to ₦65,480.00, ₦62,250.00, ₦17,402.00, ₦21,240.00 and ₦3,788.68 respectively. The yearly revenue generated from Okomu Forest Reserve by Edo State Government averaged to ₦6.2 million during the 19990 – 1994 period.

The communities depended heavily on the traditional Health Care System since health centres existed in only 3 of the communities with highest population, viz: Udo, Igbuobazua and Siluko and these are far away from most of the communities. The medicinal plants were prepared in different formulations such as ointment, liquid preparations, powdered materials, infusion etc. Many of the plants listed in this study had earlier been reported also to be medicinally useful in other areas within the country. Some of such include the works of Gills (1992), Adesina *et al.,* (1995) Okoli *et al.,* (2007), Odugbemi (2008), Soladoye *et al.,* (2010a,b), Ugbogu *et al.,* (2010), Soladoye *et al.,* (2012), Soladoye *et al.,* (2014).

Further observations during the present study showed that the knowledge of medicinal plants for malaria, children's and pregnant women's ailments was very high and their preparations were readily available as first aid in nearly every home visited.

Apocynaceae	4	4.4
Araceae	3	3.3
Asclepiadaceae	1	1.1
Asteraceae (Compositae)	4	4.4
Bignoniaceae	3	3.3
Bombaceceae	1	1.1
Capparaceae	1	1.1
Combretaceae	2	2.2
Commelinaceae	1	1.1
Cucurbitaceae	1	1.1
Ebenaceae	1	1.1
Euphorbiaceae	7	**7.8**
Guttiferae	2	2.2
Hypericaceae	1	1.1
Icacinaceae	1	1.1
Lamiaceae (Labiatae)	2	2.2
Lecythidaceae	1	1.1
Leguminosae - Ceasalpinioideae	5	**5.6**
Leguminosae - Mimosoideae	2	**2.2**
Leguminosae - Papilionioideae	4	**4.4**
Malvaceae	3	3.3
Meliaceae	3	3.3
Menispermaceae	2	2.2
Moraceae	4	4.4
Musaceae	1	1.1
Myristicaceae	1	1.1
Nyctaginaceae	1	1.1
Olacaceae	1	1.1
Pandaceae	1	1.1
Passifloraceae	1	1.1
Phytolaccaceae	1	1.1
Piperaceae	2	2.2
Rhamnaceae	1	1.1
Rubiaceae	2	2.2
Rutaceae	2	2.2
Sapindaceae	1	1.1
Scrophulariaceae	1	1.1
Solanaceae	2	2.2
Sterculiaceae	1	1.1
Ulmaceae	1	1.1
Urticaceae	1	1.1
Verbenaceae	2	2.2
Zingiberaceae	3	3.3

Table 3. Species occurrence within the plant families

Family	Species occurrence	% occurrence
Acanthaceae	3	3.3
Annonaceae	2	2.2

Table 4. Variety of uses of some plants of Okomu Forest Reserve

Uses	No of Plants recorded
Timber	16
Carving	1
Fuel wood	85
Food (fruit, seed, spicesetc)	12

Gum	2
Soap	3
Medicinal	105
Cultural/Evil spirit control	5
Chewing stick	1
Painting	1

In fact, the frequency at which malaria preparations which are often prepared with local gin, are taken is alarming. The full time herbalists claimed that they have plant preparation for high blood pressure, infertility, impotence, epilepsy and lunacy but they would not divulge their knowledge to outsiders, even their children in most cases.

Table 5. Plant parts used in ethnobotany in Okomu Forest Reserve

Part (s) used	No of cases recorded
Latex	10
Leaves	53
Root	13
Fruit/seed	12
Bark	20
Rhizome	2
Whole plant	11
Twig/branch	6
Wood	16
Flower	1
Pith	1
Total	**145**

Table 6. Occurrence of plants in land use forms of Okomu forest reserve

Plant habit	PSP	Agroforestry	Fallow	Homestead
Tree	22	20	19	13
Shrub	1	7	5	6
Herb	4	10	10	9
Climber	2	1	0	0
Liane?	0	1	1	0
Total	29	39	35	28

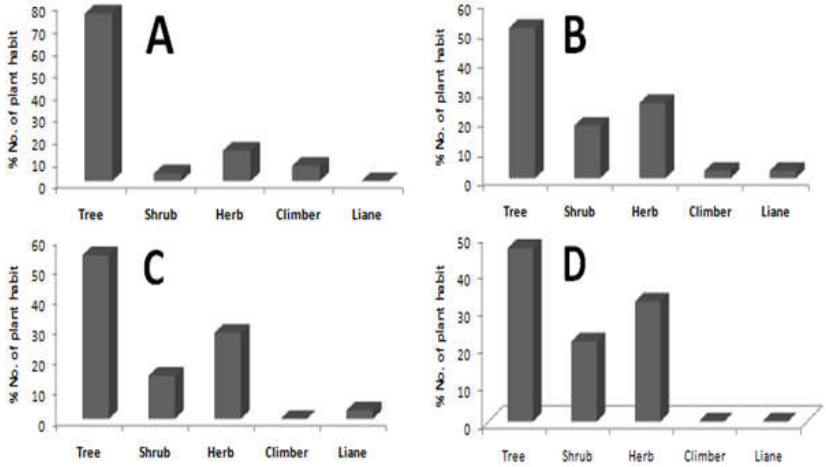

Fig 2. Percentage occurrence of plant habits in the various land use types. A - PSP; B –Agroforestry; C - Fallow; D - Homestead

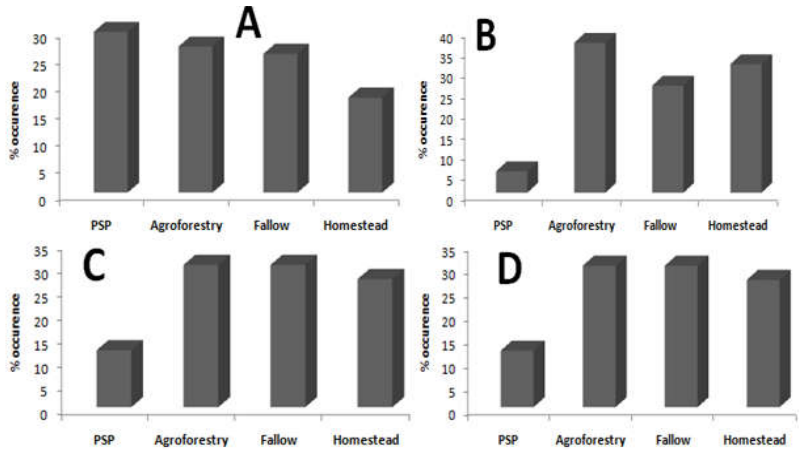

Fig2. Percentage occurrence of plant species in the various land use types. A - Trees; B - Shrubs; C - Herbs; D - Climbers &lianes

*Conclusion:*There are many studies on medicinal plants scattered all over the country. The need to bring this work together is very urgent so that they can be effectively co-ordinated for onward transfer for pharmacognostic analysis. Thus, findings from this study showed that Okomu Forest Reserve is very rich

in medicinal plant species that has remained useful in the management of ailments since time immemorial, and hence, reflecting the richness of our trado-medicine flora. The need to conserve our forest is therefore very necessary, for we do not know which plants would cure the various dangerous diseases which are now ravaging the world especially Africa. There is also the need for co-operation and co-ordination of activities between the scientists and the traditional healers. At present, there is serious resentment of the scientist by the traditional healers, who claimed that scientists have exploited them over the years. However, the secrecy with which they carry out their practice is a long age tradition which can only be broken by winning their confidence.No doubt, there is a great threat to the future and sustainable management of Okomu Forest Reserve because of the dwindling financial resources available to government from other sources except from forestry. The Edo State Government needs to put a sustainable management plan on ground for Okomu Forest Reserve. Rational utilization should be encouraged. In fact, there is a great disillusion on the part of the residents of the communities about the seriousness of the State Government's determination at conserving Okomu Forest Reserve in view of her allocating vast estates to private entrepreneurs, consequently, some communities were being relocated from time to time. This situation should be arrested if Okomu Forest Reserve is not to be lost to posterity.

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