



Journal of
Plant Sciences

ISSN 1816-4951



Academic
Journals Inc.

www.academicjournals.com

Ethnofloristic Studies of Ethiope Council Area of Delta State, Nigeria

¹M. Idu, ²B.C. Ndukwu and ¹O.O. Osemwegie

¹Department of Botany, University of Benin, Benin City, Nigeria

²Department of Plant Science and Biotechnology,
University of Port Harcourt, Port Harcourt, Nigeria

Abstract: Ethno-floristic studies of Ethiope Council area of Delta State, Nigeria was carried out with a view to take inventory of the flora and establish the varying ways plants are used by the aborigines. A total of 145 plant species distributed into 51 angiosperm families were recorded in the area. The studies indicate that the indigenous people have developed various ways and methods for the utilization of their plant resources. Efforts were made to track and document the customary knowledge and use of these plants. The information is intended to contribute to the current global efforts at safeguarding the loss of indigenous values and knowledge of biological resources.

Key words: Ethno-floristic, ethiope council area, Nigeria

Introduction

The subject of ethno-botany and the related science of ethno-floristic have continued to elicit increasing interest (WHO, 1976; Jain, 1989; Gill, 1992). As mankind continues to seek ways to harness the resources of his environment to solve the numerous challenges to his well being, issues of ethno-botany will be assuming greater relevance (Victor and Habertla, 1991).

Studies involving ethno-botanical uses of plants in several parts of the world have been documented (Kerharo and Adams, 1974; Gill and Akinmumi, 1986; Idu and Olorunfemi, 2000; Ndukwu and Obute, 2002; Ilondu and Okoegwale, 2002; Mirutse *et al.*, 2003; Harsha *et al.*, 2003). There has also been a concomitant upsurge of interest, mostly arising from the global anxiety over the loss of indigenous and customary knowledge and use of plants (Cunningham, 1994; Gill, 1992).

The present studies constitute part of the efforts at providing information about the plants and utilization by the local people in Ethiope Council area of Delta State, Nigeria.

Geo-climate and Location of Study Area

Ethiope, named after River Ethiope is a lowland area close to Sapele Delta State, Nigeria. It lies within geographical co-ordinates of 6.00°-7.00°E and 4.50°-5.50°N (Fig. 1).

The climate is typical of that found in any tropical area. It is humid for most parts of the year. In the areas where the river runs through, the effect of land and sea breeze is strongly felt. Rainfall here is usually quite heavy, leaving areas with poorly drained soils. The climate here is therefore very favorable for the growth of a diverse number of plant species. The vegetation is predominantly semi-evergreen forest and derived savanna.

Materials and Methods

The study was carried out in Ethiope East Council Area of Delta State, Nigeria between June and October 2004. Field studies covered key communities, including Abraka, Eku, Orevokpe, Isokolo, Oviore, Okpara and Kokori.

Corresponding Author: M. Idu, Department of Botany, University of Benin, Benin City, Nigeria

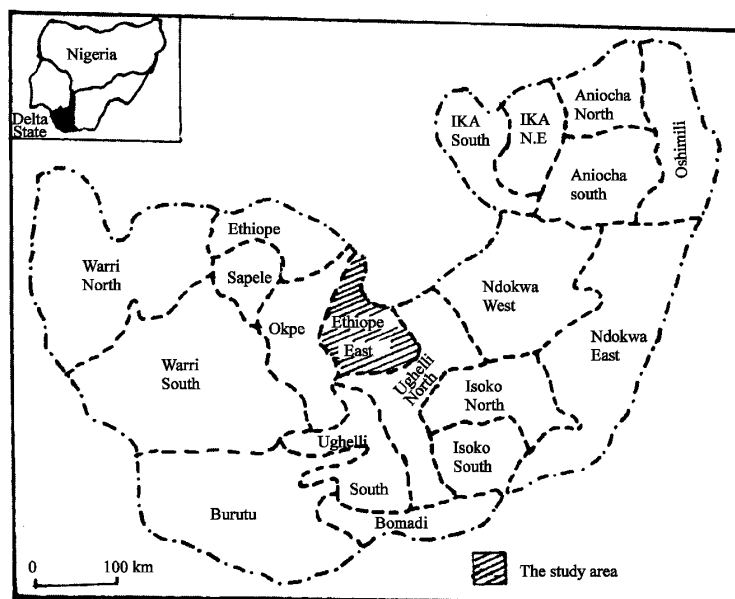


Fig. 1: Map of Deltan State showing the study area

The field work involved collection and identification of plants used by the indigenous people for various economic purposes such as food, medicine, building material, fuel, ornamentals and recreations.

Other ethnographic data were also collected during the field visits. Identification of plant specimens was made in the field using Floras and aids including FWTA by Hutchinson and Dalziel (1954, 1968) and Gill (1988). Voucher Specimens of all living plants collected were deposited at the University of Benin Herbarium.

For the ethno-botanical assessment, a guided questionnaire with the following information (Box I) was administered and latter analyzed.

Box 1: Form with Guides to the Ethno-botanical Assessment of Ethiope East Council Area

- Family name:
- Generic name:
- Common (English name):
- Local name(s) (Specify dialect):
- Locality (Detailed description):
- Town/Village:
- Description of plant:
- Habitat:
- Uses (e.g. food, condiment, medicinal etc be specific):
- Plant parts used:
- Method of preparation (provide details about amount of plant part required, whether fresh or dried, ratio of plant to men strum, etc):
- Route of administration and dosage:
- Are incantations involved? Yes or No

- Other plants or ingredients included in the preparation
- Names-species, genus, family name; local name and part used
- Botanist who identified the plant:

Results and Discussion

The study recorded a total of 145 species distributed into 51 angiosperm families. A number of the plants were observed to have multiple ethno-botanical uses by the indigenous people of the study area.

However, most of the species were first and foremost food plants, but due to the multifarious needs of mankind the people have had to develop through trial and error various other uses for these species. In particular, a number of the plants recorded are used by the local herbal practitioners in the treatment and management of varying ailments among the population. It was also observed that due to general knowledge of plants in the area, self-medication is very rampant among the people. It is important to note that this phenomenon further demonstrated the invaluable role of customary knowledge as passed down from one generation to another Cunningham (1994).

The varying uses of these plants by the indigenous peoples as identified and recorded in the study are further presented and discussed below.

Plants used in Ceremonies and Rituals

Like most rural communities, ceremonies are a very important part of the lives of the indigenes of Ethiopia. Ceremonies are of various types and different plants are used as appropriate:

Birth (Naming Ceremony)

Here, an animal is usually slaughtered depending on the financial resources of the parents and members of the extended family of the child. Some of the plants utilized during this ceremony include *Aframomum meleguata*, *Cola nitida*, *Cola acuminata* and wine from *Raphia vinifera*. There are also several natural food substances, which are symbolic to this ceremony such as honey and salt, which represent good things to the future of the child.

Marriage ceremony (According to Native law and Custom)

Here, the groom is required to bring a dowry to the family of the bride and this dowry comes in form of various food substances with only a little amount of money presented. Some of the food substances include *Dioscorea* species, *Musa paradisiaca*, *Musa sapientum*, oil from *Elaeis guineensis*, wine from *Raphia vinifera*, *Cola acuminata*, *Cola nitida*, *Cocos nucifera*, etc. Certain animal products can also be presented.

Plants used for Building

Basically in the more rural areas where there are lower levels of development, buildings, which are not made of cement, are primarily made of clay, wood and bamboo as well as leaves from palms. The various types of buildings found include:

- Houses built of cement in which wood is used for the primary structure of the roof
- Houses built of clay with a skeletal structure of *Bambusa bambusa* (Bamboo).
- Houses not used for settlement but for other purposes like recreation creation centers e.g. bars can be made of a skeletal structure of bamboo with palm fronds as coverings for the walls and roof. Some types of wood used for building are *Milicia excelsa* and *Triplochiton scleroxylon*,

Fencing

Fencing is usually done with cement walls or bricks, but for cases where security is not maximally required or where finances are not available ornamental plants are used for fencing. These plants include Ice plant, *Ixora coccinea*, *Annona muricata*, *Acalypha tricolor*, *Agave Americana*. In cases where medium security is required, *Bambusa bambusa* is used. Thus fencing plants can be divided into living and non-living material, with ornamental plants forming the living plant materials because they are planted for palm frond and bamboo, forming the non-living materials, because they are cut off the living trees and used for the fencing.

Food Plants

Edible Seeds

These are normally in use after the seeds have been grinded, although sometimes they can be used whole. Some seeds which are used grinded include those of *Irvingia gabonensis* and *Curcumis melo*. *Cyprus tuberosus* is chewed raw, but it is not normally swallowed because it can induce a coughing fit. However, the seeds of several other species are boiled or roasted or processed in several forms before they are consumed. These include *Oryza sativa*, *Phaseolus vulgaris*, *Zea mays* (which can be blended into a thick pasty cereal called akamu (pap), which is commonly fed to infants). The grinded seeds are usually used to prepare soup while the seeds, which are cooked whole, are converted to meals on their own. The seeds of *Elais guineensis* are however of great importance because they are not only used to prepare soup, they are a source of palm oil which is economically important both within and outside the region.

Edible Leaves

Almost all the edible leaves are used to make soup. Leaves used for making soup include *Telfaria occidentalis*, *Talinum triangulare*, *Amaranthus hybridus*, *Celosia argentea*, *Allium ampelprasum*, *Vernonia amygdalina* etc. An advantage of use, is that most of the leaves have medicinal properties, they are good sources of vitamins and help to build the immune system. Some leaves, not used for making soup can be used in other forms for cooking or making salads.

Edible Fruits

Most of the edible fruits found here are those found commonly within and outside the state. They include members of the Rutaceae family such as *Citrus saniensis* and *Citrus reticulata*. Also observed are *Musa sapientum*, *Psidium guajava*, *Mangifera indica*, *Ananas comosus*, *Solanum melongena*. The majority of these fruits are consumed raw, but there are some others that are cooked before consumption e.g., *Lycopersicum esculentum* (tomato). Some fruits may also be blended before being used to cook e.g., *Capsicum annum*. The most common fruits found here grow in the wild; They include *Anarcadium occidentale*, *Psidium guajava*, *Cocos nucifera*, *Citrus sinensis* and a few others. The trees in which these fruits are found have other parts like their roots and leaves, which have high medicinal values, like the leaves of *Carica papaya*, which help to reduce blood pressure.

Edible Roots and Tubers

A number of species of different genera have edible tubers. These tubers are the storage site of carbohydrate thus they have very high energy yield and thus they form the staple food of the region e.g., *Manihot esculenta* (cassava) is a very important plant in the region, it is one of the most important food plants because the tuber can be processed into various edible forms for consumption, these forms are widely eaten local delicacies, some of their local names are eba, amala, starch, etc. Also, *Dioscoria* sp. Yam can be pounded into a pulp called pounded yam. In producing food from Cassava, care must be taken to ensure that the cyanide content has been totally removed. These plants are commonly consumed in this region because they thrive very well on the soil and the physical environment.

Edible Stems

The soft stem of several species can be chewed for their sweet taste. In most instances, only the juice is swallowed and the remains are discarded. An example is *Saccharum officinarum* (Sugar cane).

Plants Used as Spices

These plants are commonly used all over the region and their uses are generally homogenous. The use of these plants is not restricted to only one particular part of the plant; various parts of these plants are used as spices. For example, the fruit of *Capsicum annum* is the spice, the seeds of *Monodora myristica* are the spice and while the leaves of *Ocimum gratissimum* is the spice.

Plants Used for Beverages

Extracting the juices of fruits like *Citrus sinensis*, *Ananas comosus*, makes a large number of these beverages. These constitute the non-alcoholic beverages. The alcoholic beverages are usually those obtained from other parts of the trees of other plants e.g., Wine and gin obtained from *Raphia vinifera*.

Medicinal Plants

According to the World Health Organization (WHO, 1976) The Traditional Healer is a person who is recognized by the community in which he lives as competent to provide health care by using vegetable, animal and mineral substances and certain other methods based on the social, cultural and religious background as well as on the knowledge, attributes and beliefs that are prevalent in the community regarding physical, mental and social well being and causation of diseases and disability (Gill, 1992). Furthermore, WHO (1977) defines medicinal plant as any plant which in one or more of its organs contain substances that can be used for the therapeutic purposes or which are precursors for the synthesis of useful drugs. Based on this definition, it is possible to distinguish between medicinal plants whose constituents and medicinal properties have been well established scientifically and plants that are regarded as medicinal but which have not yet been subjected to thorough investigation (Gill, 1992).

Also in many developing countries like Nigeria, in order to promote traditional healing systems, the traditional healers from time immemorial included rituals, magic, incantations and sacrifices etc., in their methods of treatment, now these rituals have become a part and parcel of the traditional healing system (Gill, 1992).

In Ethiopia, this is usually the case, although a lot of the cures involve simply mixing one or two plants together to produce the desired effect.

A fact that is interesting to note is that of all the plants identified, about half have medicinal properties and some of them combine these with other properties, examples are *Telfaria occidentalis*, which while serving as an edible vegetable also acts as a blood tonic and treats convulsion, *Gossypium hirsutum* which is a fiber plant can be used as an eye drop and to cure ulcers and sores, *Citrus sinensis* which is a fruit also treats dysentery as well as others.

The common diseases found in this region include digestive system disorders, fevers and skin infections. This is confirmed by the large number of species used in the treatment of these ailments. Some species are used in the treatment of more than one disease and these are very important to herbal practitioners (Table 1).

Aches and Pains

This class includes backache, painful joints, rheumatic pain, headache and general body ache. In referring to the backache, included are pains emanating from the spinal cord, pains from kidney and even pains from other diseases, which greatly affect the back.

Table 1: Number of plant species used for different categories of ailments

Class of ailment	No. of species used to treat
Digestive system disorders	22
Fevers (Malaria, Typhoid, Yellow fever)	13
Urinary tract disorders	6
Aches and pains	10
General body health and strength	9
Respiratory system disorders)	8
Infant (New born care)	4
Wound, sores and cuts	9
Gynecological and child birth	11
Eye diseases	5
Infectious diseases	3
Circulatory and nervous system disorders	7
Skin care and oral hygiene	8
Bites (Snake, others)	3

Most of the treatment for pain involves mostly the leaves and they are mostly applied externally on the affected areas. Also used for the pain are certain liniments, which are oils extracted from the kernels of certain plants like *Elaeis guineensis*.

Circulatory System Disorders

These are the problems common among the people, however the treatment is not as common as the occurrence. Some plants are taken as blood purifiers e.g., *Azadirachta indica*. The circulatory system disorders that occur here basically affect the liver and are more common among the men because of the large quantity of alcohol they consume over the years. They are also fond of consuming alcohol along with their native medical treatment; this alcohol is a form of gin locally called Ogogoro (Gin).

Digestive System Disorders

Here, most of the plants used are used to treat dysentery and diarrhea. Purgatives and laxatives are commonly used because a lot of the plants with these properties grow in the wild and are readily available and the knowledge of their use is passed down from generation to generation e.g., *Vernonia amygdalina*.

Eye Diseases

Eye infections are not very common among the indigenes of this area. Most common is the use of medicinal plants to clear the eyes. The extreme cases of eye problems like myopia and hypermetropia are referred to orthodox medical practitioners.

Fevers

The most common fevers here are malaria and typhoid. Malaria fever is common because there are few preventive measures taken against it. Typhoid fever exists is prevalent because of the unhygienic drinking water which is available and also due to the general lack of cleanliness and unhygienic cooking and living habits of the people. However, there is a lower level of awareness on the treatment of this ailment because most fevers are first classified as malaria fever and it is only after the sufferer does not respond to treatment that alternative measures are taken. Most of the people suffering from typhoid fever most often resort to orthodox medicine.

Respiratory System Disorders

Some of these diseases include colds, coughs, sore throat and tuberculosis as well as asthma. There are various species used to treat these sorts of diseases, they include *Aloe barteri*, *Cymbopogon citratus*.

Table 2: Plants with several medicinal uses.

Botanical name	Local name	No. of diseases reportedly treated
<i>Kalanchoe pinnatum</i> (Lam.) Oken	Ebe-okponkan	11
<i>Ocimum gratissimum</i> L.	-	10
<i>Vernonia amygdalina</i> Del.	Origbo	9
<i>Gossypium hirsutum</i> L.	-	8
<i>Aloe barteri</i> Baker	-	8*
<i>Azadirachta indica</i> A. Juss	Dongoyaro	8
<i>Oldenlandia corymbosa</i> L.	Oyigi	7
<i>Musa paradisiacal</i> L.	Orhe	7
<i>Acalypha indica</i> L.	-	6
<i>Jatropha curcas</i> L.	-	6
<i>Mangifera indica</i> L.	Imangoro	6*
<i>Alchornea cordifolia</i> (Schum.et Thonn.) Muell. Arg.	Osokpo	6
<i>Ficus asperifolia</i> Miq.	-	6
<i>Solanum nigrum</i> L.	Ebe-akpe	5*
<i>Talinum triangulare</i> (Jacq.) Willd.	Ifo-urhobo	5
<i>Cleome rutidosperma</i> DC.	Ekuya	5
<i>Laportea estuains</i> (L.) Guad.	Ipe-erin	4
<i>Mitracarpus scaber</i> Zucc.	-	4*
<i>Citrus sinensis</i> (L.) Osbeck.	Utie	4
<i>Aspilia africana</i> (Pers.) C.D. Adams	-	4
<i>Synedrella nodiflora</i> (L.) Gaertn.	Ogbugho	4
<i>Curcuma longa</i>	Iblue	4
<i>Chromolaena odorata</i> (L.) K. and R.	-	4
<i>Ageranthum coryzoides</i> L.	Ikpemotu	4
<i>Emilia sonchifolia</i> (L.) D.C.	Orho-orua	3
<i>Acalypha hispida</i> Burm.	Ishakpa	3
<i>Newbouldia laevis</i> Seem.	Ogiriki	3
<i>Amaranthus spinosus</i> L.	Iserhen	3
<i>Dissotis rotundifolia</i> (SM.) Triana		3
<i>Costus afer</i> Ker-Gawl.		3
<i>Cymbopogon citratus</i> (D.C.ex Nees) Stapf.	Iti	3
<i>Solenostemon monostachys</i> (P. Beauv.) Briq	Ariophe	2
<i>Acalypha tricolor</i> Wilkesiana Mull. Arg		2
<i>Fagara zanthoxylum</i> L.	Ujo	2
<i>Mammea africana</i> L.		2
<i>Achryanthus aspera</i> L.	Irie	2
<i>Musanga cecropoides</i> R. Br.	Ukhorube	2
<i>Hannoa wainbana</i> Pierre and Engl.		2
<i>Fagara lepreurii</i> L.	Ujo	2
<i>Pterocarpus osun</i> Craib.	Urheri	2*
<i>Ricinodendrum heudeloth</i> (Baill.) Pierre.	Eke	2
<i>Luffa aegyptica</i> Mill.	-	2
<i>Citrus reticulata</i> Blance	-	2

* These species are reported to have other medicinal uses, which could not be documented

Urinary Tract Infections

Urinary tract infections are quite common in this region but there are equally a number of treatments available to people suffering from them. A good number of them are sexually transmitted and the most prevalent one is gonorrhoea. Some species used to treat it are *Acalypha hispida*, *Bambusa vulgaris* and *Solanum nigrum*.

Wounds, Sores and Cuts

The treatment for wounds and cuts are quite varied depending on the type of wound, sore or cuts. For example, some plants are used to treat maggot-infested wounds, others are used to treat sores that arise from boils. *Musa paradisiaca* is commonly used for these treatments. Furthermore, *Manihot esculenta* was reported to be part of the ingredients used in preparation of charm that prevent knife or machete (cutlass) but was not verified because it involved incantations and could not be scientifically explained or investigated. Snakebites can also be treated with *Oldendia corymbosa*.

Skin Infections

These are fairly common probably because of poor hygienic conditions in this region. Those, which are most common, are those caused by fungi. However, there are a wide variety of treatments for them involving the use of plants like *Mammea africana*, *Pterocarpus osun*, *Mitracarpus scaber*. As stated earlier, several plants have been reported to be of value in the treatment of more than one ailment and are shown in Table 2.

Table 3: Floristic composition and species with ethnobotanical value

Family	Botanical name	Common name	Local name	Uses
Agavaceae	<i>Agave sisalana</i> (Engelm.) Perr	Sisal plant	Erevwen-eban	O: Ornamental (used outside)
	<i>Dracaena manii</i> Bak.	-	-	M: Medicinal
	<i>Sansevieria liberica</i> Labr	Bowstring hemp	Orie-erivwin	O: Ornamental
Amaranthaceae	<i>Achryanthus aspera</i> L.	Prickly-chaff	Irie	M: Treats stomach disorders hastens delayed labour (Note: Too much causes abortion)
	<i>Amaranthus hybridus</i> L.	Green leaf	-	F: Used to make soup
	<i>Amaranthus spinosus</i> L.	-	Iseruen	M: Treats abdominal pain, sore throat and ulcer.
	<i>Celosia argentea</i> L.	-	Shoko	F: Used to make soup
Anacardiaceae	<i>Anacardium occidentale</i> L.	Cashew nut tree	Ikashu	F: Fruit is edible
	<i>Mangifera indica</i> L.	Mango tree	Imangoro	F: Fruit is edible
				M: Treats malaria, diarrhea, burns, diabetes, hiccup and throat diseases.
Bromeliaceae	<i>Ananas comosus</i> (L.) Merr	Pineapple	Enanaɗja	F: Fruit is edible
Annonaceae	<i>Annona muricata</i> L.	-	-	O: Ornamental
	<i>Annona senegalensis</i> Pers.	Sour sop	-	F: Fruit is edible
	<i>Demmetia tripetala</i> Bak. F.	-	Imako	M: Treats fever
	<i>Monodora myristica</i> (Gaertn.) Dunal	Nutmeg	-	F: Cooking Spice
	<i>Xylopia aethiopia</i> (Dunal) A. Rich.	Ethiopian pepper	-	F: Spice
Umbelliferae	<i>Daucus carota</i> L.	Carrot	Ikaroti	F: Eaten raw or cooked (fruit)
Apocynaceae	<i>Alostonia boonei</i> De Wild	-	Ukpakahu	M: Cures swollen foot
	<i>Theratia nerfolia</i> Juss	-	-	O: Ornamental
Araceae	<i>Colocasia esculenta</i> (L.) Schott.	Cocoyam	Idu	F: Tuber is edible
Arecaceae	<i>Cocos nucifera</i> L.	Coconut	Orikokodia	F: Fruit is edible, juice is sweet R.M: Nut used to make bowl for food M: Used to make liniment
	<i>Elaeis guineensis</i>	Oil palm	Edi	F: Seeds processed to palm oil used to cook soup R: M; Used to make soap
Arecaceae	<i>Raphia Vinifera</i> P. Beauv.	Raffia palm	Ekian	B: Palm frond used for walls and roof of huts O: Palm fronds used for decoration
				F: Tapped for local (palm) wine
Asteraceae	<i>Aspilia Africana</i> (Pers.) C.D. Adams	-	-	M: Stops bleeding relieves febrile headaches' cures stomach trouble and eye opacities.
	<i>Chromolaena odorata</i> (L.) K and R.	Siam weed	-	M: Treats malaria, dysentery, headache, toothache and stops bleeding
	<i>Emilia sonchifolia</i> D.C.	-	Orho-orua	M: Treats sore throat, clears eye, enhances limbs of children to walk
	<i>Synedrella nodiflora</i> Gaertn.	-	Ogbugho	M: Treats fresh cuts and wounds, stops bleeding, cures leprosy
	<i>Tridax procumbens</i> L.	Coat buttons	-	M: Treats stroke
	<i>Vernonia amygdalina</i> Del and V. Col Drake	Bitter leaf	Origbo	F: Used form looking soup M: Treats worms, stomach ache, itching and ringworm, good for oral hygiene, laxative, antipyretic, treats pneumonia and diabetes
	<i>Ageratum conyzoides</i> L.	Goat weed	Ikepemotu	M: Used for dressing wounds, like skin disease and to clear eye

Table 3: Continued

Family	Botanical name	Common name	Local name	Uses
Bignoniaceae	<i>Newbouldia laevis</i> (P. Beauv.) Seemann	-	Ogiriki	M: Stops painful menstruation, threatened abortion, enhances fertility
Brassicaceae	<i>Brassica oleraceae</i> L.	Cabbage	Ikabeji	F: Eaten raw or cooked
Burseraceae	<i>Dacryodes edulis</i> (G. Don.) H.J. Lam.	Native pear	Ube	F: Fruit is edible
Capparidaceae	<i>Cleome rutidosperma</i> D.C.	Wild mustard	Ekuya	M: Used for ear ache, convulsion, boil, washing maggot infested wounds and sores
Caricaceae	<i>Carica papaya</i> L.	Paw-paw	Eto oyibo	F: Fruit is edible M: Treats malaria, reduces, blood pressure
Combretaceae	<i>Combretum grandiflorum</i> G. Don <i>Terminalia catapa</i> L. <i>Terminalia ivonensis</i> A. Chev. <i>Terminalia superba</i> Engl. and Diels	- Indian almond -	Ikedike Idigbo	M: Treats jaundice M: Fruit is edible E: Branches used for fuel R: M: Used for woodwork (joinery and outdoor work) R: M: Used for plywood and interior use
Convolvulaceae	<i>Ipomoea batata</i> (L.) Lam	Sweet potato	Ipoteto	F: Cooked as food
Crassulaceae	<i>Kalanchoe pinnatum</i> (Lam.) Oken.	Resurrection plant	Ebe-okponkpan	M: Heals wounds on babies, navel, earache, cough, diarrhea, dysentery, astringent and antiseptic, epilepsy, ulcer, insect bites and cough
Cecropiaceae	<i>Musanga cecropoides</i> R. Br.	-	Ukhorube	M: Treats tapeworm, dysentery
Curcubitaceae	<i>Curcumis melo</i> L. <i>Curcumis sativus</i> L. <i>Lagenaria sicerria</i> (Molina.) Standl. <i>Luffa aegyptica</i> Mill. <i>Mormodia charantia</i> L. <i>Telfaria occidentalis</i> Hook. Fil.	Melon Cucumber Bottle gourd Smooth loath Laisam pear Pumpkin	Ikogiri - Ahwore-orise - Udjiro Ebiume	F: Used for cooking soup F: Cooked or eaten raw M: Treats liver problem M: Drastic purgative, mild tonic M: Medicinal F: Used to cook soup
Cyperaceae	<i>Cyperus tuberosus</i> Rottb.	Tiger nut	Opio	M: Used as blood toxic and for convulsion F: Seed eaten as snack (not swallowed because it may induce a coughing fit)
Dioscoraceae	<i>Mammea africana</i> L. <i>Dioscorea alata</i> L. <i>Dioscorea esculentum</i> (Loun.) Burkill	Water yam Yam	Urherame Ole Ole	M: Treats skin disease, syphilis F: Tuber cooked in various ways F: Tuber cooked in various ways
Euphorbiaceae	<i>Acalypha hispida</i> Burm. F. <i>Acalypha indica</i> L. <i>Acalypha torta</i> L. <i>Acalypha wilkesana</i> Mull-Arg. <i>Acalypha marginata</i> L. <i>Alchornea cordifolia</i> (Schum. and Thonn.) Mull-Arg. <i>Alchornea laxiflora</i> (Benth.) Pax and K. Hoffm. <i>Breynia nivoso</i> L. <i>Euphorbia hyssopifolia</i> L. <i>Manihot esculenta</i> Crantz. <i>Phyllantus muellerianus</i> (Oktze) Exell. <i>Hevea brasiliensis</i> Muell. Arg. <i>Ricinodendrum heudeloth</i> (Baill.) Pierre	- - - - - Christmas bush - Ice plant - Cassava - - Rubber tree -	Ishakpa - - - - Osokpo Urievwu - Ebe-ewe Imidaka Obuko iyeke Eke	M: Treats chronic gonorrhoea, headache and clears the eye M: Treats ulcer, asthma, bronchitis, pneumonias, maggot-infested wounds O: Ornamental M: Treats gastrointestinal disorders, skin infection O: Ornamental F: Used for cooking M: Revives from unconsciousness' treats toothache, gonorrhoea, fever, rheumatic pains and ulcer M: Medicinal O: Used to make hedges M: Prevents abortion M: Prevents knife cuts F: Staple food of the region M: Treats black worm R.M: Tree is tapped for its sap which is economically important worldwide M: Helps with labour pain, treats elephantiasis

Table 3: Continued

Family	Botanical name	Common name	Local name	Uses
Fabaceae	<i>Vigna unguiculata</i> (L.) Walp.	Beans	Isha	F: Cooked as a meal
	<i>Arachis hypogea</i> L.	Groundnut	Isagwe	F: Seed is edible
	<i>Phaseolus vulgaris</i>	Beans	Isha	F: Cooked as meal
	<i>Azelia africana</i> Sm.	Azelia		R; M; Wood for top-quality exterior
	<i>Abrus precatorius</i> L.	Crab's eye	Ibiero-egodi	M: Stimulant for energy
	<i>Azelia quanzensis</i> L.	Azelia		R; M; Wood for top-quality exterior
	<i>Baphia nitida</i> Lodd.	Cam wood		M: Prevents miscarriage
	<i>Dalbergia melanoxylon</i> Guill and Perr.	African black wood	-	R; M; Wood for instrument and craft
	<i>Dialium guineense</i> Wild	Velvet or black tamarine	Ohioroma	M: Treats fever
	<i>Gossweilerondendrum balsamiferum</i> Harms.	-	-	M: Wood for plywood and furniture
	<i>Hymenostegia azelia</i> Harms	-	Upa	M: Medicinal
	<i>Leptadeniastrum africanum</i> L.	-	Owangan	M: Fumicant used as snuff
	<i>Pterocarpus osun</i> Craid	-	Urheri iseie	M: Cures eczema and other skin diseases
	<i>Garcinia Kola</i> Heckel	Bitter kola	-	F and C: Food and ceremonies
Guttiferae	<i>Irvingia gabonensis</i> (Aubry-Lecomte) Baill	-	Ogbono	F: Used to make soup
Ixonanthaceae	<i>Juglans regia</i> L.	Walnut	Oyirhe	F: Nut is edible
Labiatae	<i>Ocimum brasicum</i> L.	Curry leaf	Ufuo-oyibo	F: Used as cooking
	<i>Ocimum gratissimum</i> L.	Scent leaf		F: Spice for cooking M: Cures fever, cough, chest pain, diarrhea, catarrh, prevents miscarriage, stops nasal bleeding, relives cold, pain, headache and bronchitis
Lauraceae	<i>Solenostemon monostachus</i> (P. Beauv.) Briq.	-	Ariophe	M: treats tuberculosis and stomach ache
	<i>Thymus vulgaris</i> L.	Thyme	-	F: Used as cooking spice
	<i>Persea americana</i> Mill.	Pear	-	F: Fruit is edible
	Liliaceae	<i>Allium cepa</i> L.	Onions	Ututa
<i>Allium ampeloprasum</i> L.		Leek	-	F: Used for cooking
<i>Allium sativum</i> L.		Garlic	-	F: Used as cooking spice M: Cures pile
Malvaceae	<i>Aloe barteri</i> Bak.	West African aloe	-	M: Used to treat liver and spleen diseases, stomach ache, cold and cough, ringworm, wounds, cysts and others
	<i>Gossypium hirsutum</i> L.	Cotton	Oruru	M: Relieves menstrual cycle, used as eye drop, dysentery, stimulates menstrual flow, hastens child birth, cures ulcers, sores and is a nerving tonic
	<i>Hibiscus mutabilis</i> L.	-	-	O: Used for decoration (internally and externally)
	<i>Hibiscus rosa-saniensis</i> L.	Hibiscus		O: Used for decorating internally and externally
Melastomataceae	<i>Abelmoschus esculentum</i> (L.) Moench	Okra	Ishawo	F: Fruit as condiment
	<i>Dissotis rotundifolia</i> (Sm.) Triana.		Uku erovwo	M: Cures diarrhea, dysentery and stomach ache
Meliaceae	<i>Azadirachta indica</i> A. Juss.	Neem	Dongoyaro	M: Cures malaria, skin diseases, jaundice, liver complaints, piles blood purifier, urinary disease, used as a wash for syphilis
	<i>Entandophragma cylindricum</i> Sprague	-	Sapele	R; M; Wood for making plywood, furniture, moldings, etc.
	<i>Khaya ivorensis</i> A. Chev.	-	-	R; M; wood for furniture, boat making, flooring, joinery
Moraceae	<i>Bosqueia angolensis</i> L.		Otukhuru	M: Treats diarrhea
	<i>Milicia excelsa</i> (Wel) Benth	-	Iroko	R; M; Wood for boat building, flooring, joinery, etc. M: Heals wounds

Table 3: Continued

Family	Botanical name	Common name	Local name	Uses
Musaceae	<i>Ficus asperifolia</i> Miq.	Sand paper tree	-	M: Cures stomach and urinary disorder, gonorrhea, scabies, dressing wounds, boils.
	<i>Musa paradisiaca</i> L.	Plantain	Orhe	F: Cooked as a meal M: Used for wounds, insect bites, cures diarrhea, dysentery, epilepsy, waist pain and enhances pregnancy R: M; Laves used to wrap food before cooking or after cooking
	<i>Musa sapientum</i> L.	Banana	Odibo	F: Fruit is edible R: M; Leaves used to wrap raw/cooked food
Myrtaceae	<i>Psidium guajava</i> L.	Guava tree	Igobe	F: Fruit is edible M: Cures fever
Ochnaceae	<i>Lophira alata</i> Bank ex. Gaertn.	-	Ovbenrenren	R: M; Wood for wood block, flooring etc
Poaceae	<i>Bambusa bambusa</i> L.	Bamboo	Okpon	B: Used for building
	<i>Bambusa vulgaris</i> Schrad.	Bamboo	-	M: Treats gonorrhoea
	<i>Cymbapogon citrates</i> (DC.) Stapf.	Lemon grass	Iti	F: Used as cooking spice M: Stimulates the nervous system, cures cough and malaria
Portulacaceae	<i>Saccharum officinarum</i> L.	Sugar cane	Ugwere	F: Chewed for juice but not swallowed
	<i>Oryza sativa</i> L.	Rice	Irosu	F: Cooked as a meal
	<i>Panicum maximum</i> Jacq.	Guinea grass	-	M: Revives from unconsciousness
	<i>Zea mays</i> L.	Maize	Oka	F: Fruit is edible after cooking or roasting
	<i>Talinum triangulare</i> (Jacq.) Willd.	Water leaf	Ifo urhobo	F: Used to cook soup M: Used to cure schistosomiasis, premenstrual syndrome, scabies, wounds and aids virility
Ranunculaceae	<i>Coriacium variegatum</i> L.	Yellow oleander	-	O: Ornamental
Rubiaceae	<i>Mitracarpus scaber</i> Zucc.	-	-	M: Cures ringworm and other fungal diseases, fresh wounds and ulcers
	<i>Oldenlandia corymbosa</i> L.	-	Ogigi	M: Oral oxytotic for snake bites, includes uterine contractions, treats intermittent fever, relieves burning sensation and nervous depression
	<i>Exora coccinea</i> L.	Jungle geranium	-	O: Ornamental
Rutaceae	<i>Citrus aurantiifolia</i> (Christn.) Swingle	Lime	Otiegaga	M: Cures impotency F: Fruit is edible
	<i>Citrus paradisi</i> Macf.	Grape fruit	Igrapi	F: Fruit is edible, juicy
	<i>Citrus reticulata</i> Blanco	Tangerine	-	F: Fruit is edible, juicy M: Used to cure fever and malaria
	<i>Citrus sinensis</i> (L.) Osbeck	Orange	Utie	F: Fruit is edible and juicy M: Twigs chewed for cleaning teeth, bark prescribed for fevers, dysentery and headache
	<i>Fagara lepreurii</i> (Guill and Perr) Engl.	-	Ujo	M: Treats body weakness and toothache
Sapindaceae	<i>Fagara zanthoxylum</i> Lam.	-	Ujo	M: Treats general body weakness, toothache
	<i>Blighia sapinda</i> Kong	-	Ukpererhen or oghighan	M: Cures fever
Simaroneae	<i>Hannoa wainbana</i> Pierre and Engl.	-	-	M: Treats hypertension and fever.
Solanaceae	<i>Capsicum annum</i> L.	Pepper	Iribo	F: Fruit used in cooking
	<i>Capsicum frutescens</i> L.	Pepper	-	F: Used as cooking spice
	<i>Lycopersicum esculentum</i> P. Mill	Tomato	Itomatosi	F: Used in cooking (fruit) M: Used to clean jewelry
	<i>Solanum melongena</i> L.	Garden egg	Imie	F: Fruit is edible
	<i>Solanum nigrum</i> L.	-	Ebe-akpe	M: Treats convulsion, clears redness of eye, treats skin disease, gonorrhoea and liver enlargement
	<i>Solanum tuberosum</i> L.	Sweet potato	-	F: Cooked as a meal

Table 3: Continued

Family	Botanical name	Common name	Local name	Uses
Sterculiaceae	<i>Cola acuminata</i> (P. Beauv.) Schoet and Endl.	Kola	Evwe	F and C: Food and ceremonies
	<i>Cola nitida</i> Schoet and Endl.	Kola		F and C: Food and ceremonies
	<i>Theobroma cacao</i> L.			M: Prevents boil, acts as a stimulant F: Fruit is edible
	<i>Triplochiton scleroxylon</i> K. Schum	-	Ewowo	R: M; Wood for making furniture, plywood, moldings etc.
Tiliaceae	<i>Corchorus capsularis</i> L.	Jute	Ewedu	F: Used for cooking soup
	<i>Corchorus olitorius</i> L.	Jute	Ewedu	F: Used for cooking soup
Urticaceae	<i>Laportea aestuains</i> (L.) Gaud	-	Ipe-erin	M: Treats constipation, burns, wounds and rickets
	<i>Fuerya aestuains</i> (L) Ciaud ex.Miq	Old woman smokes tobacco	Ovie-risokpo	M: Crushed and applied on pregnant woman's abdomen to develop the child
Verbanaceae	<i>Clerodendrum</i> L. Sp.	-	-	F: Used as cooking
Zingiberaceae	<i>Aframomum creptum</i> L.	-	Erhie	F: used as cooking spice
	<i>Aframomum meleguata</i> K. Schum.	Alligator pepper		F and C: Food and ceremony spice
	<i>Aframomum sceptrum</i> L.	-	Otaiko	F: Used as cooking spice
	<i>Costus afer</i> Ker-Gawl	Common ginger lily	-	M: Treats cough, rheumatism, diabetes
	<i>Curcuma longa</i> L.	-	Ibiue	M: Treats yellow fever, malaria, purifies blood, treats typhoid fever
	<i>Zingiber officinale</i> Rose.	Ginger	-	F: Used as cooking spice to make beverage M: Acts as digestive stimulant

B: Building, F: Food, F and C: Food and Ceremony, M: Medicine, R: M: Raw material

Diversity of Floristic Composition

The ethno-floristic composition of the study area indicates relatively diverse flora with about 51 families and 145 species. Table 2 shows the number of families as well as the species recorded and possess ethno-botanical value.

Conclusions and Recommendations

The study strongly supports the need to strike a fine balance between science and nature in order to integrate global and local perspective on the use of plants, biodiversity information and economic development with cultural and linguistic diversity as earlier pointed out by Martin *et al.* (2002). The study further revealed the value of local knowledge of plants in folk practices as is being currently recognized all over the world.

Ethno-botanical studies can become effective tool in the efforts at capturing community people and their interplay with the surrounding biological, cultural and linguistic diversity. The study also revealed that the indigenous people are inextricably dependent on their flora. Therefore, the use of plant and plant products is a huge business both within and between the various communities. There is a strong indication that attempts at developing the plant resources of the area will certainly contribute to not only the average income of the people but would significantly enhance the overall well being.

Moreover, the conservation of these plant resources in view of the current uninformed and reckless harvesting for the various traditional uses could be better handled with accurate documentation. It is against this backdrop that the present studies have become very relevant.

References

Cunningham, A.B., 1994. The Role of Ethnobotany and Customary Knowledge in the Conservation and Use of Plants. In: Safeguarding the Genetic Basis of Africa's Traditional Crops. (Ed.) Putter, A., CTA, Netherlands.

- Gill, L.S. and C. Akinmumi, 1986. Nigeria Folk Medicine; Practices and Beliefs of Ondo People. *J. Ethnopharmacol.*, 18: 257-266.
- Gill, L.S., 1988. Taxonomy of Flowering Plants. Illupeju press Ltd., Benin City, pp: 338.
- Gill, L.S., 1992. Ethnomedicinal uses of plants in Nigeria. Uniben Press, University of Benin, Benin City, Nigeria, pp: 276.
- Harsha, V.H., S.S. Hebbar, V. Shripathi and G.R. Hedge, 2003. Ethno-medico-botany of Ultera Kannada District in Karnataka, India-Plants in Treatment of Skin disease. *J. Ethnopharmacol.*, 84: 37-40.
- Hutchinson, J. and J.M. Dalziel, 1954. Flora of West Tropical Africa. The Whitefriars Press, Vol. 1.
- Hutchinson, J. and J.M. Dalziel, 1968. Flora of West Tropical Africa. The Whitefriars Press, Vol. 2.
- Idu, M. and D.I. Olorunfemi, 2000. Plants used for medicinal purposes by the Koma people of Adamawa State, Nigeria. *Indigenous Knowledge and Monitor*, 8: 18.
- Ilondu, E.M. and E.E. Okoegwale, 2002. Some medicinal plants used in the management of Dermatophytic Disease in Nigeria. *J. Environ. Studies*, 2: 146-151.
- Jain, S.K., 1989. Methods and approaches in ethnobotany. In: Proceedings of the 2nd training course and Workshop in Ethnobotany held at Lucknow, March 1988.
- Kerharo, J. and J.G. Adams, 1974. *Le Pharmacopoe Senegalaise. Traditionale*. Vigot Freres, Paris.
- Martin, G.J., L.A. Agama, J.H. Beaman and J. Nais, 2002. Projek Etnobotani Kinabalu; The making of a Dusun Ethnoflora (Sabah, Malaysia). In People and Plants Working Paper, February 2002.
- Mirutse, G., A. Zemeda, E. Thomas and W. Zerihum, 2003. An ethnobotanical study of medicinal plants used by the Zay people in Ethiopia. *J. Ethnopharmacol.*, 85: 43-52.
- Ndukwu, B.C. and G.O. Obute, 2002. Morphological and ethnobotanical considerations of the genus *Lagenaria* Ser. (Cucurbitaceae) in the Niger Delta Area. *J. Econ. Taxon. Bot.*, 26: 751-757.
- Victor, A.A. and I.A. Haberta, 1991. Attitude to alternate health care delivery system in Plateau state. *Afr. J. Pharmacol. Drug Res.*, 10: 131.
- WHO, 1976. African Traditional Medicine. Afro-Tech. Rep. Series 1. WHO Brazaville, pp: 3-4.
- WHO, 1977. Resolution-promotion and development of training and research in traditional medicine. WHO Document No., 30: 49.