Available online at www.worldscientificnews.com

World Scientific News

WSN 70(2) (2017) 140-157 EISSN 2392-2192

Ethnobotanical Survey of Commonly Used Medicinal Plants in Northern Cross River State, Nigeria

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ABSTRACT

An ethnobotanical survey of commonly used medicinal plants was carried out among the people of Northern Cross River comprising five Local Government Areas (Ogoja, Yala, Bekwarra, Obudu and Obanliku) in Cross River State, Nigeria through the use of oral interview using short structured questionnaires. Those interviewed included herbalist (native doctors) and herbal medicine sellers. The survey was to identify commonly used medicinal plants in these areas and how these medicinal plants are sourced and used. Results obtained from the survey show that a total of 110 plant species belonging to 43 families were identified as commonly used medicinal plants in the study area. The commonly used medicinal plants are mostly sourced from uncultivated land, communal (unprotected) and protected forests and farm lands. The survey revealed some of the local uses of these plants and the different ailments they can cure.

Keywords: Medicinal plants, commonly used, herbal medicine, Northern Cross River State

1. INTRODUCTION

[1], defined Ethnobotany as the study of how communities of a particular region use indigenous plants for food, clothing, medicine and other activities while [2] stated that the documentation of such plants is critical for the conservation and utilization of biological resources.

From the very beginning of human civilization, plants have been employed for alleviating human suffering and records of the use of plants have been documented for thousands of years. [3], reported that the active principles isolated, have provided breakthroughs in the development of several lifesaving drugs, which are in use today and different civilizations have developed their own indigenous system of medicines.

[4], reported that medicinal plants are of great value to the health of individuals and communities while [5] reported that medicinal plants are the richest biological resource of drugs of traditional systems of medicine including modern medicines, nutraceuticals, food supplements, folk medicines, pharmaceutical intermediates and chemical entities for synthetic drugs. According to [6], the medicinal value of these plants is as a result of some substances that produce a definite physiological action on the human body and these chemical substances are referred to as phytochemicals, which are non-nutritive chemicals that have protective or disease preventive property.

[7], reported that plant materials have been a major source of natural therapeutic remedies and have been used to treat various infectious diseases in many developing nations. In recent times, natural products of plant origin have taken centre stage as the main source of new, safer and more effective bioactive compounds with medicinal properties [8]. [9], reported the practice of herbal medicine as fast becoming more accepted in the world of conventional medicine as clinical research, analysis, and quality control have been capable of demonstrating the treatment value of herbal medicine. Similarly, [10] reported that traditional medicine is used across the globe and has a rapidly growing economic importance while [11] reported that in developing countries, it is often the only accessible and affordable treatment available. [12] reported that survey and documentation of a country's or community's natural resources is a crucial requirement for proper utilization of its raw materials and that full knowledge of various plants is necessary, so as to ensure proper usage. [13], reported that indigenous people have long history and expertise in the use of medicinal plants, however, information on these plants is mainly passed from one generation to the next orally and even to date is poorly documented. [14], opined that the lack of an organized documentation for medicinal plant knowledge, may also contribute to the loss of medicinal plant knowledge particularly from plants that are neglected or non-preferred.

From the forgoing literature survey, the main aim and objectives of this study was to carry out a survey and documentation of commonly used medicinal plants of Northern Cross River comprising five local government Areas (Ogoja, Yala, Bekwarra, Obudu and Obanliku), in Cross River State, Nigeria.

2. MATERIALS AND METHODS

2. 1. Study area

Cross River State is a coastal state in South Eastern Nigeria, named after the Cross River, which passes through the state. Located in the Niger Delta, Cross River State occupies 20,156 square kilometres. It shares boundaries with Benue State to the north, Enugu and Abia States to the west, to the east by Cameroon Republic and to the south by Akwa-Ibom and the Atlantic Ocean. The study was carried out in Northern Cross River covering five Local Government Areas (Ogoja, Yala, Bekwarra, Obudu and Obanliku). It was carried out from (August, 2016 – January, 2017). The area falls within the Southern Forest/Guinea savanna

agro ecological zone of Nigeria, situated in the Northern Cross River State, it lies between latitudes 6°39' and 6°41' North of the Equator and longitude 8°47' and 8°58' East of the Greenwich meridian. The topography is generally low lying, ranging from below 80 – 140 M (on the average) above sea level with three soil types namely, clay, loam and sandy. It covers a total landmass of 972 km^2 (375 sq mi). The areas have a humid tropical climate of (1250 – 1300 mm) rainfall and a mean annual temperature of 30 °C [15]. The source of livelihood is subsistence agriculture, basically farming of cassava, yams, palm oil and palm wine among others [15].

3. RESULTS

Results (Table 1) show a total of 110 plant species belonging to 45 families identified as commonly used medicinal plants in the study area. These were reported by the native doctors and herbal medicine sellers to be used in the cure and treatment of several ailments. The botanical names of the plant species, families, ailments cured, parts of the plants that are used and their preparation and administration are also shown in Table 1.

Table 1. Identified commonly used medicinal plants in Northern Cross River, their uses, preparation and administration

S/N	Botanical name	Family	Plant part used	Ailment cured	Method of preparation and administration
1.	*Acanthus montanus*	Acanthaceae	Roots leaves	Gonorrhoea, wounds	Freshly collected roots are washed clean with water, mashed and added to locally brewed alcohol (Gin). The extract is taken 20mls twice daily. Ground leaves are placed over heat and put on wound daily till wound heals.
2.	*Draceania arborea*	Agavaceae	Bark	Boils	The bark is ground and rubbed on affected part.
3.	*Anacardium occidentale*	Anacardiaceae	Tree bark	Whooping cough	Tree bark is collected and ground to pulp. This is extracted with clean water. Extract is taken 20mls, 2 times daily.
4.	*Mangifera indica*	Anacardiaceae	Stem bark	Malaria jaundice fever, pains	Stem bark is cut into pieces, boiled and taken orally. Usually a concoction with *Salacia pyriformis* is taken orally.

5.	*Lannea kerstingii*	Anacardiaceae	Stem gum root bark	Asthma Bruises and sprains Gout dysentery general body weakness and nervous diseases	Stem gum is taken orally for asthma. The stem gum is emulsified in gin or palm wine and applied on bruises and sprains.
6.	*Xylopia aethiopica*	Annonaceae	Fruits bark	Trichomonas, Vaginalis	Extract 10 fruits with 300mls of locally brewed gin.
7.	*Cleistopholis patens*	Annonaceae	Root	Fungal infections	The roots is either boiled with water or soaked in local gin and extract taken orally.
8.	*Uvaria afzelia*	Annonaceae	Root stem bark leaf	Infectious hepatitis malaria stomach ache	The root, stem, bark or leave is macerated and boiled in water or soaked in local gin. The extract is taken orally.
9.	*Anona muricata*	Annonaceae	Root stem bark leaves	Venereal diseases Intestinal ailments mouth odour, tooth ache, sores	The root decoction with native natron is taken with pepper for about 6 days. Pulverized root and dried leaves extract is applied directly to sores. Stem bark infusion is chewed for mouth odour and tooth ache.
10.	*Monodora myristica*	Anonaceae	Seed	Guinea worm/skin sores Head ache constipation	Seed powder is applied to the infected area. The powder is chewed and/or rubbed on the head and eaten with oil for constipation.
11.	*Rauwolfia vomitoria*	Apocynaceae	Roots leaves	Gornorrhea, stomach ache, waist pains, urogenital infection	Preparation and administration requires utmost care. Take a root of 4cm long and 1cm in diameter, peel off the root bark, grind and add the paste to 20ml of water or gin. A milky mixture is obtained. 5mls of this is taken daily or 10mls with interval of 2 or 3 days. Pregnant women or ulcer patients must not take this in case of side effect; it is advised to take a lot of water or 20mls of fresh

					palm oil to neutralize effect.
12.	*Alstonia boonei*	Apocynaceae	Tree bark roots	Worm expeller, Ascaris infection, Malaria, Bladder diseases, Gonorrhoea	Bark is peeled, ground and extracted with water. A glassful is taken twice daily till symptoms subside. Small sized pieces of the roots are then steeped in water for 3 hours, decanted and a cupful of the infusion administered 3 times daily
13.	*Funtumia elastica*	Apocynaceae	Latex	Impotency	A cupful of latex freshly obtained from the tree is diluted with water (1/1 v/v) and taken orally for 4 days to prevent impotency.
14.	*Catharanthus roseus*	Apocynaceae	Leaves roots	Haemorrhage	Leaves and roots are boiled in water and extract taken orally.
15.	*Funtumia elastica*	Apocynaceae	Stem bark latex	Pile Jaundice Impotency	Stem bark is extracted with local gin and taken orally. Stem bark infusion is taken for jaundice. The latex is used to cure male impotency.
16.	*Gongronema latifolium*	Asclepiadaceae	Leaves	Stomach ache	Leaves are added as vegetable to soup and eaten.
17.	*Calotropis procera*	Asclepiadaceae	Root bark seeds	Expectorant	Extract of ground root bark taken orally.
18.	*Ageratum conyzoides*	Asteraceae	Leaves stem	Fever, genital warts, gonorrhoea	Fresh leaves and stem are ground and the sap squeezed out to rub on genital warts or used as enema for fever and gonorrhoea.
19.	*Vernonia cinerea*	Asteraceae	Leaves	Painful menstruation	Leaves are ground and extracted with water. Extract is used for enema.
20.	*Vernonia amygdalina*	Asteraceae	Leaf Roots stem twigs	Pneumonia Diabetes Astringent Stomach problems	Extracts of all part is taken orally. Roots and stem twigs are chewed.
21.	*Newbouldia laevis*	Bignonaceae	Bark leaves	Malaria Internal heat	Handful of stem bark is extracted with 600ml of palm wine. The extract is

					taken 1 glass, 3 times daily. Ground leaves in water mixed with local chalk is used as enema for internal heat.
22.	*Adansonia digitata*	Bombacaceae	Leaves pulp seeds latex bark	Rheumatic joints swellings asthma kidney and bladder diseases dysentery tooth ache inflamed gums skin diseases	Extracts obtained from young leaves, pulp, seeds and bark are dissolved in gin or water and taken orally. Latex from the tree is applied directly for toothache, inflamed gums and skin diseases.
23.	*Bombax costatum*	Bombacaceae	Bark leaves root	Measles and other skin diseases painful menstruation, convulsion oedema epilepsy	The leaf extracts are added to water and use as a bath for measles and other skin diseases. The leaves and bark extract decoction is taken orally for painful menstruation. Decoction from the leaves is taken orally twice daily for fever, nervous breakdown, convulsion and epilepsy.
24.	*Afzelia africana*	Caesalpinaceae	Leaves stem bark root	Oedema stomach ache leprosy wounds constipation high blood pressure	The leaves, stem bark and root are extracted using gin/alcohol and taken orally. Extract of the stem bark is applied on the skin for leprosy.
25.	*Berlinia grandiflora*	Caesalpinaceae	Stem bark	Oedema Jaundice poisoning wounds	Decoction prepared from the stem bark is taken orally. For wounds the decoction is applied on it.
26.	*Daniella oliveri*	Caesalpinaceae	Stem bark	Dysentery diarrhoea	The stem bark is extracted with local gin and taken orally.
27.	*Delonix regia*	Caesalpinaceae	Leaves flower stem bark	Malaria	The leaves, flower and stem bark is boiled and taken orally.
28.	*Terminalia superb*	Combretaceae	Leaves	Hepatitis malaria yellow fever	Leaves are ground and cooked in water, the extract is mixed with aqueous extract of *Azadirachta indica* and taken orally, used for bathing or used as enema.

29.	*Combretum micranthum*	Combretaceae	Roots	Prolonged labour	Roots are boiled in water and extract taken orally.
30.	*Anogeissus leiocarpus*	Combretaceae	Leaves seeds stem bark roots	Jaundice haemorrhoids, diarrhoea fever coughs wounds rheumatism	The leaves are boiled with leaves of *Carica papaya*, *Rauwolfia vomitoria* and taken orally. Decoction from the stem bark is taken orally while the roots are cut into smaller pieces and chewed directly.
31.	*Terminalia ivorensis*	Combretaceae	Bark	Arthritis Piles Constipation Stomach ache	The bark is ground into powder and its red decoction taken orally.
32.	*Aspila africana*	Compositae	Leaf root	Wounds internal bleeding stomach ache lumbago	The fresh leaves is squeezed and applied to wounds. Women with internal bleeding sit on hot decoction of the leaves. Leaf decoction is used externally for facial headache and this mixed with clay is taken for stomach ache. The leaf juice is used directly as an eye drop to remove any foreign bodies in the eye. The root decoction with a little salt and lime juice is applied directly on wounds or taken orally.
33.	*Colocynthis vulgaris*	Cucurbitaceae	Fruit pulp	Cathartic	Extract of boiled fruit pulp taken orally.
34.	*Telfaira occidentalis*	Cucurbitaceae	Leaves	Swollen eyes	Ground leaves are soaked in water and filtered. Few drops are put in eyes.
35.	*Manniophyton africana*	Euphorbiaceae	Leaves	Snake bite	Leaves are macerated and rubbed on the affected area.
36.	*Ricinodendron africanum*	Euphorbiaceae	Seeds	Amenorrhoea Menstrual irregularity	The ground seeds are extracted with hot water, salt is added and the extract taken orally.

37.	*Jatropha curcas*	Euphorbiaceae	Stem bark latex	Purgative pile small pox	Extract of stem bark taken as enema or purgative. Latex is applied to piles and skin lesions.
38.	*Anthonotha macrophylla*	Euphorbiaceae	Young leaves	Gonorrhoea rashes	The young leaves are ground and rubbed on affected parts or soaked and taken as enema.
39.	*Euphorbia hirta*	Euphorbiaceae	Shoot	Asthma skin diseases	Plant extract in water taken orally. Extract of plant squeezed onto infected areas.
40.	*Alchornea cordifolia*	Euphorbiaceae	Leaves bark root fruit	Cold rheumatic pains urethral disease purgative dysentery gonorrhoea	Leaves are macerated or chewed with other herbs such as *Myrianthus arboreus*. The infusion of mixes of the leaves, bark and root along those of *Mitragyna africana*, natron and lime juice are taken orally. The root is cut and chewed. The root and its young twigs are added to white chalk and pepper while the fruit is eaten directly.
41.	*Alchornea laxiflora*	Euphorbiaceae	Stem stem bark	Bronchitis venereal diseases	Stem bark decoction is taken orally. Stem is used as chewing stick.
42.	*Uapaca acuminata*	Euphorbiaceae	Leaf	Stimulant	The leaves are dissolved in hot water and taken as tea.
43.	*Tetrapleura tetraptera*	Fabaceae	Fruit	Rheumatism	Fruits are boiled in soup and taken orally.
44.	*Dialum guinensis*	Fabaceae	Stem	Tooth decay	Stem is sliced into short thin pieces and chewed.
45.	*Parkia biglobosa*	Fabaceae	Stem bark leaves fruits pulp seeds	Malaria, cough, pain, fungal infection, tooth ache, diabetes, skin infection, burns, snake bite	Stem bark, leaves, fruits, pulp, seeds are ground, soaked in local gin and taken orally.
46.	*Pentaclethra macrophylla*	Fabaceae	Stem bark, leaves, pods, pulp, seeds	Gonorrhoea Infertility diarrhoea wound itching convulsion	Stem bark, leaves, pods, pulp and seeds are ground, soaked in local gin and taken orally. Extracts are added to water to form paste and applied to wounds.

47.	*Acacia nilotica*	Fabaceae	Leaves root bark seeds	Astringent chest pains pneumonia dysentery diarrhoea haemorrhoids	Extracts of leaves, root, stem bark and seeds are extracted using gin and taken orally.
48.	*Albizia ferruginea*	Fabaceae	Bark and root bark stem bark	Constipation, dysentery	The bark and root bark are dried and ground into powder. Usually taken with honey 2 table spoons full twice daily. Decoction of the stem bark is taken for dysentery.
49.	*Albizia lebbeck*	Fabaceae	Bark leaf seed flower	Diarrhoea pile haemorrhoids bronchitis asthma dermatitis gonorrhoea	The bark decoction is prepared and taken orally. The juice prepared from the leaves is used to cure night blindness. Seed and flower poultice is applied directly to the affected part.
50.	*Albizia zygia*	Fabaceae	Root bark stem bark leaves	Cough insanity tooth decay female sterility conjunctivitis	Toxic in high doses. Decoction from the stem and root bark is taken orally. The leaves are washed thoroughly, boiled with water and taken orally.
51.	*Oncoba spinosa*	Flacourtiaceae	Root leaves stem bark	Dysmenorrhoea Gastritis Jaundice Colic Leprosy Inflamed testicles Swollen joints Cold rheumatism	The root is extracted with local gin and taken orally. The leaves ash is applied to affected area. Leaf decoction is taken along with alligator pepper.
52.	*Garcinia kola*	Gutiferae	Fruits roots	Gonorrhoea cough, tooth decay	Fruit is eaten for cough. Roots are soaked in local gin and drunk and also used to gaggle.
53.	*Garcinia manni*	Gutiferae	Stem	Tooth decay	Stem is cut and sliced into short thin pieces and chewed.
54.	*Allanblackia floribunda*	Guttiferae	Root bark stem bark leaves	Tooth ache Malaria	Extracts of root bark are applied directly for tooth ache. The stem bark and leaves are usually boiled with water along other

					anti-malaria plants and taken orally.
55.	*Klainedoxa verticilata*	Irvingiaceae	Leaves	Pile	Fresh leaves are ground and extracted with water. The extract 20mls is used for enema so as not to cause immediate purging or excretion.
56.	*Irvingia gabonensis*	Irvingiaceae	Stem bark	Spleen infection	The decoction of stem bark is mixed with that of *Afzelia africana* and taken orally.
57.	*Ocimum gratissimum*	Labiatae	Leaves root	Cough Cold catarrh chest pains , colic diarrhoea	Leaves are inhaled while hot, plug the nostrils for five minutes with squeezed leaf paste. The roots are chewed.
58.	*Ocimum basilicum*	Labiatae	Whole plant leaf seeds	Headache Cough Cold Gonorrhoea Constipation Dysentery	Decoction of the whole plant is taken orally.
59.	*Combretodendron africanum*	Lecythidaceae	Leaves stem bark	Malaria hepatitis sleeping sickness	The leaves and stem bark are boiled with those of mango, pawpaw, neem and lemon grass and taken orally.
60.	*Ocimum gratissimum*	Libiatae	Leaves	Threadworm infection	Leaves are ground and juice squeezed into anus daily.
61.	*Gossipum hirsutum*	Malvaceae	Leaves	Measles small pox	Leaves are ground into a pulp. This is mixed with clay and water to form a paste. It is then robbed on the body last thing before bed time.
62.	*Abelmoschus esculentus*	Malvaceae	Leaves	Scorpion bite	Leaves are ground and paste applied on affected area.
63.	*Carapa procera*	Meliaceae	Leaf bark seed	Purgative wounds, ring worms	Dissolve 1g of stem bark decoction in one glass of water and take orally. Seed oil is extracted and applied to burns, ringworms and insect bites.
64.	*Guarea cedrata*	Meliaceae	Stem bark	Chest pain	The decoction of the stem bark is taken orally half a glass twice daily.

65.	*Khaya senegalensis*	Meliaceae	Stem and root bark	Malaria waist pain general weakness of the body	Decoction of the stem and root bark are taken one glass 3 times daily. A short of alcoholic extract of the stem bark is taken daily.
66.	*Piptandeniastrum africanum*	Mimosaceae	Stem bark	Sores	The stem bark is ground and applied on the sore. Root is extracted with local gin and applied as well.
67.	*Milicia excelsa*	Moraceae	Root	Pile, stomach ache, diarrhoea	The root is cut into pieces and boiled in palm wine and the filtrate taken orally.
68.	*Musanga cecropoides*	Moraceae	Fruit bark	Haemorrhage, Asthma, gonorrhoea	Fruits boiled in water and extract taken orally. Extract from bark in is drunk for asthma and gonorrhoea
69.	*Myrianthus arboreus*	Moraceae	Leaves	Pimples boils	Paste from ground leaves are used to mask affected areas.
70.	*Ficus exasperata*	Moraceae	Roots	Stomach ache dizziness	Roots are ground, soaked in local gin and taken orally.
71.	*Bosqueia angolensis*	Moraceae	Stem bark leaf	Diarrhoea menorrhagia	Decoction of the stem bark and leaves is taken orally.
72.	*Treculia Africana*	Moraceae	Bark	Cough Laxative	Bark decoction is taken one cup per day orally.
73.	*Moringa oleifera*	Moringaceae	Flower leaves stem bark roots	Cough asthma Liver, pancreas and scurvy ailments	Flower, leaves, stem bark and roots are washed, chopped, dried and sprinkled on food as required by individual.
74.	*Psidium guajava*	Myriaceae	Leaves	Laxative Malaria diarrhoea	Leaves are boiled with leaves of *Cympogon citratus* and extract taken orally.
75.	*Pycanthus angolensis*	Myristicaceae	Leaf stem bark root	Purgative Enema Skin diseases	Leaf juice, stem bark paste or root infusion orally.
76.	*Staudtia stipitata*	Myristicaceae	Seeds	Skin diseases	The seeds are crushed and the reddish juice applied to infected areas.
77.	*Lophira alata*	Ochnaceae	Leaves stem bark root seed	High blood pressure dysentery syphilis	The leaves, stem bark and root is extracted and taken orally.

				diarrhoea constipation fever jaundice	
78.	*Coula edulis*	Olacaceae	Roots	Diarrhoea gonorrhoea stomach ache waist pains	A root 6cm long, 2 cm diameter is peeled, the bark is ground and extracted with water or palm wine. The filtrate is used for enema 3 times a week or taken orally. If used daily it can cause vaginal discharge. Extract of root is also made with local gin and taken orally.
79.	*Srombosia pustulata*	Olacaceae	Stem Root bark	Abnormally wrinkled or shrivelled parts of the body	The stem and root bark are pounded with palm oil or palm kernel oil and rubbed on the affected body part.
80.	*Cocos nucifera*	Palmae	Stem bark fruit shell	Tooth decay	Stem bark or outer shell of fruit is boiled in water and used as a mouth wash.
81.	*Elaeis guinensis*	Palmae	Young leaves	Malaria	The young yellowish leaves are ground, soaked in water and filtered. The filtrate is used as enema.
82.	*Baphia nitida*	Papilionaceae	Leaves	Pile, Asthma, whooping cough, tooth decay	A handful of leaves are ground and extracted with water, the filtrate is used daily for enema till symptoms subside. It is taken orally for asthma and cough. Twigs are chewed for tooth decay.
83.	*Erythrina senegalensis*	Papilionaceae	Root	Abortion gonorrhoea	The root is extracted in boiling water or with local gin and taken orally.
84.	*Baphia nitida*	Papilionaceae	Leaves	Pre-eclampsia	Leaves are cooked in soup for 30 minutes and taken orally.
85.	*Pterocarpus osun*	Papilionaceae	Tree bark	Skin blemishes	Stem bark is ground into powder. Water is added to make a paste and rubbed on the skin to clear blemishes.
86.	*Amphimas pterocarpoides*	Papilionaceae	Stem bark	Leprosy dysentery	Decoction of the stem bark is mixed with that of *Costus afar* and taken orally.

87.	*Erythrina senegalensis*	Papilionaceae	Leaves stem bark	Jaundice gonorrhoea ulcers	The bark is ground and mixed with food and taken orally. The leaf juice is mixed with honey (one table spoon per day) for two days and purged with castor oil or decoction of *Cassia alata*.
88.	*Pterocarpus erinaceous*	Papilionaceae	Bark Leaf	Acnes Eczema	Paste of bark and leaf mixed with kernel or castor oil is applied to the infected area.
89.	*Piper guineense*	Piperaceae	Leaves fruit seeds	Stomach ache	Leaves, fruits/seeds are added to soup as vegetable and taken orally.
90.	*Eleusine indica*	Poaceae	Roots	Cough	The roots are macerated and extracted with warm water.
91.	*Bambusa vulgaries*	Poaceae	Leaf shoot	Abortificant Vomiting of blood wounds respiratory diseases gonorrhoea	The leaves decoction is taken orally for abortion. The leaf juice is given for vomiting of blood. Young shoot poultice is applied directly to wounds while its decoction is taken for respiratory diseases. The young shoot extracted with local gin together with tobacco leaves and native salt is taken two shots twice daily for gonorrhoea.
92.	*Talinum triangulare*	Portulaceae	Leaves	Measles	Handful of leaves are washed, ground and extracted with water. Filtrate is used twice daily for enema.
93.	*Maesopsis eminii*	Rhamnaceae	Leaves Stem bark	Purgative Gonorrhoea	Leaves are extracted using gin and taken orally. Stem bark is soaked in palm wine for at least one whole day and taken one glassful in the morning.
94.	*Parinari kerstingii*	Rosaceae	Inner bark	Dysentery	Macerated inner bark is soaked for a day and taken orally.
95.	*Hensia crinata*	Rubiaceae	Leaves	Gonorrhoea stomach ache migraine	The leaves are cut, ground and added to soup and cooked, then taken orally for stomach. For

					gonorrhoea the root is extracted with local gin and extract taken orally. Extract in water taken 2 times a day for migraine.
96.	*Ixora divaricata*	Rubiaceae	Root	Gonorrhoea Dysmenorrhoea	The root is extracted with local gin and taken orally.
97.	*Nauclea latifolia*	Rubiaceae	Root bark leaves fruit	Fevers Blennorrhoea Colic constipation Jaundice Otis Menstrual disorders	Root, bark, leaves and fruit are dried, ground and extracted using local gin and taken orally.
98.	*Citrus aurantifolia*	Rutaceae	Fruits roots	Jaundice malaria Gonorrhoea	12 ampicillin capsules are added to 600mls of lime juice and 20mls of concoction's taken twice daily. Root is extracted with palm wine or local gin and taken orally.
99.	*Citrus sinensis*	Rutaceae	Leaves	Malaria fever Diarrhoea	Leaves are soaked in palm wine or boiled with water and filtrate taken orally.
100.	*Fagara zanthoxyloides*	Rutaceae	Roots	Gonorrhoea syphilis	The root is extracted with local gin and the filtrate taken orally.
101.	*Blighia sapida*	Sapindaceae	Fruit stem bark leaves root bark	Whitlow stimulant gonorrhoea jaundice dysentery headache ulcers sore throats back ache wounds	The outer skin of the fruit is applied on whitlow. Stem bark extracted with gin is taken as a stimulant and tonic. The stem bark powder mixed *Allium cepa* and *Capsicum frutescens* is eaten with pap for gonorrhoea. The fresh leaves are chewed or mashed and applied to wounds. The root and bark decoction is extracted with local dry gin and taken orally.
102.	*Chrysophyllum albidum*	Sapotaceae	Stem bark	Fever cold stomach pains	Decoction of the stem bark is dissolved in local gin and taken orally.
103.	*Schwenikia americana*	Solanaceae	Leaves	Antidote against magical powers	Leaves are boiled in water or soaked in local gin and extract taken orally as antidote.

104.	*Solanum melongena*	Solanaceae	Leaves Roots	Rheumatism Swollen joints Rashes	Poultice of the leaves and roots are pound with local white chalk and applied on the affected area.
105.	*Cola nitida*	Sterculiaceae	Root	Arthritis rheumatism	The root is soaked in local gin and taken orally.
106.	*Sterculia oblonga*	Sterculiaceae	Leaf seeds	Magical purpose	Magical application done using incantations.
107.	*Trema guineensis*	Ulmaceae	Leaves	Infertility	The leaves are ground up with other soup ingredients and cooked in soup and eaten at supper.
108.	*Vitex doniana*	Verbanaceae	Stem	Tooth decay	Stem is sliced into short thin pieces and chewed.
109.	*Costus afar*	Zingiberaceae	Leaves stem	Eczema ringworm malaria cholera measles	Crude aqueous extracts of ground leaves is rubbed on affected lesion and is also taken as enema. Stem extract mixed with native chalk is rubbed on skin for measles.
110.	*Zingiber officinale*	Zingiberaceae	Rhizome	Cough	Rhizome ground and extracted with hot water and taken as tea or chewed.

4. DISCUSSION

Medicinal plants constitute the base of health care systems in many societies. The recovery of the knowledge and practices associated with these plant resources are part of a vital strategy linked to the conservation of biodiversity, discovery of new medicines and the bettering of the quality of life of poor rural communities [16]. Many species of plants have been reported to have medicinal properties and beneficial impact on health e.g. antioxidant activity, digestive stimulation action, anti-inflammatory, antimicrobial, hypolipidemic, anti-mutagenic effects and anti-carcinogenic potentials [17]. Since time immemorial, plants have been a reliable source of medicines for humans [18] and constitute a major economic resource of most countries of the world including Nigeria. Most of the herbal medicines are sourced from trees, many of which also have other uses such as providing timber and protection of the environment. In addition, they have taxonomic classes which enable their classification with respect to their role in economic development [19].

Based on the high number of commonly used medicinal plants used in the treatment of different ailments in the five local government areas of Northern Cross River, this study has shown that indigenous medicinal plants exist, which can be exploited in the production of various drugs. Herbal products are mostly produced in liquid, solid, semi- solid or vapour form as reported by [20]. In the study area, water and alcohol (local gin or palm wine) are the main solvents usually used in the extraction of the active components either by maceration, decoction, and infusion or concoction, similar finding was reported by [21] on ethnobotanical

study of medicinal plants used for malaria therapy in Enugu, South east, Nigeria. This survey showed that a greater number of the locals interviewed heavily relied on traditional herbal medicines for the treatment of various ailments and is continually relied upon by these people who have refused to be swayed in spite of the criticisms traditional herbal medicine have received as a result of advances in modern medicine because these traditional herbs have been working for them. The major reasons why local people have depended on these herbal medicines have been that they are the only source of medicine available to them. Also, the herbs are cheaper and the herbalists and the plant materials for herbal preparations are readily accessible to the people [21].

In this study, a total of 110 plant species belonging to 45 families were identified as commonly used medicinal plants which confirm that the use of traditional or herbal medicine is widely accepted in the survey area. The number of plant species identified as commonly used medicinal plants in this study are quite high when compared with 96 plant species identified as medicinal plants in Enugu state, Nigeria by [1], 45 by [22] in Ijesa land, Osun state, Nigeria, 27 by [23] in Biu, Borno state, Nigeria and 21 by [21] in five Local Governments Areas of Enugu State, Nigeria.

This may be as a result of the location of the study area which falls within the Southern Forest/Guinea savanna agro ecological zone of Nigeria. Over the years, it has become necessary for a developing nation like Nigeria to document uses of medicinal plants in all communities, which are continuously being explored. This is because the old folks who are usually the custodians of such information are dying and also due to the fast disappearance of traditional cultures and natural resources arising from urbanization and industrialization of these areas, such information could be lost forever [24]. Documentation of this kind of information will be beneficial in general healthcare, ecological control, forest conservation of endangered species, research and providing leads to plants with useful medicinal properties [21].

The importance of these plant species to the local communities cannot be over emphasized as they make use of them daily and preferred them more than the orthodox medicines [23]. In the study area, the plants parts commonly used are the leaves and stem bark. The use of mostly the leaves and stem bark of these plants is as a result of their availability throughout the year. [25] and [26] in their study of ethnobotany and conservation of Ribako Strict Nature Reserve in northern Nigeria and ethnobotanical survey of medicinal plants in Jos, Plateau state, Nigeria made similar observation. It was also observed that some plant species have multiple uses and was used in treating and curing more than one ailment. [24], reported similar finding on ethnobotanical survey of medicinal plants in Biu, Borno state, Nigeria.

In this study, it was observed that the native doctors or traditional medicine practitioners mostly sourced their medicinal plants from protected and unprotected (communal) forest, farm lands and uncultivated land. The continuous interest and demand for plants with medicinal properties and potency for treatment of various ailments is causing over exploitation of such plant genetic resources in the study area. According to researchers like [27], the depletion rate of plant resources generally is high, yet little is known about most of the world's plant species especially tropical floras. When viewed against the current rate of extinction and decimation of the forests in this area, there is the need to conserve what is left as forests for posterity sake.

5. CONCLUSION

In this study carried out in the five Local Government Areas (Ogoja, Yala, Bekwarra, Obudu and Obanliku) that make up Northern Cross River State, Nigeria, a total of 110 plant species belonging to 45 families were identified as commonly used medicinal plants. The medicinal plants mostly sourced from protected and unprotected forests by herbalist are used for the treatment of various ailments in the study area.

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(Received 28 March 2017; accepted 15 April 2017)