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Ethno-Botanical Uses and Taxonomic Composition of some Aju Mbaise (Mbaise wraps)

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ABSTRACT: This document focuses on the ethnobotanical uses and taxonomic composition of some Aju Mbaise (Mbaise wraps). A total of 31 plant species belonging to 24 families were identified in the wraps collected from the study area. These plants are used in the treatment of ailments such as hypertension, typhoid, malaria, boost fertility in females, post-partum (immediately after birth), treatment of diabetes, treatment of arthritis, and induce weight loss. Annonaceae family constituted 9.68% of the total plant family, followed by Acanthaceae, Combretaceae, Fabaceae, Malvaceae, and Rubiaceae with 6.45% each. Among the plant species, *Cnestis ferruginea* (Connaraceae) occurred in five wraps. This is followed by *Alternanthera bettzickiana* (Amaranthaceae), *Craterispermum cerinanthum* (Rubiaceae), and *Napoleona imparalis* (Lecythidaceae) found in four wraps while *Acanthus montanus* (Acanthaceae), *Barteria nigritana* (Passifloraceae), *Nephrolepis exaltata* (Nephrolepidaceae), *Oxytenanthera abyssinica* (Poaceae), *Palisota hirsuta* (Commelinaceae), *Scleria naumanniana* (Cyperaceae), and *Sida rhomboidea* (Malvaceae) are in three ailments each. These plant species and families with high occurrence are the most effectively used plant groups in the study for the treatment of these diseases.

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The use of herbs in the treatment of some common health challenges amongst the people has become a part of the African people's culture and particularly in Nigeria (Burkill, 1985, 1994, 1995, 1997, 2000; Toranyiin, et al., 2003; Orabueze et al., 2017; Madara et al., 2018), and has come a long way in drug or medicine development and their wellbeing (Burkill, 1985, 1994, 1995, 1997, 2000). It is the commonest and most readily available and affordable to the people in the rural areas. It has been practiced over so many years and it is still practiced today despite the advancements made in various fields in orthodox medicine practice (Tor-anyiin, et al., 2003; Orabueze et al., 2017; Madara et al., 2018). It is the first source of treatment commonly available for the many people in most rural and urban communities, sustaining the health, wealth, and total happiness of the people in general (Madara et al., 2018). The use of herbs in the treatment of ailments among humans has been handed down from one generation to another either by experience and observation, verbally, most oftentimes in the form of stories, or spiritually by ancestors, or in modern times in writing and these experiences are used in diagnose, prevent and eradicate diseases among the peoples (Mokgobi, 2014). The importance of herbaceous plants cannot be over-emphasized apart from been used as drugs some are also used as vegetables, and as minerals in the diet or food, we eat.

This is inevitable since there is no rural community in which one cannot find the presence of an herbal or native medicine practitioner either male or female to whom the community members mainly consult when there are emergencies before going to the hospital for orthodox medicine. In the practice of herbal medicine, various plant parts are involved, which are collected, either used singly on its own or in a combination of many parts to achieve the desired goal of healing of the patient (Burkill, 1985, 1994, 1995, 1997, 2000). As defined by the World Health Organization (WHO, 2002), a medicinal plant is any plant which in one or more of its organs contains substances that can be used for therapeutic purposes or which are precursors for the synthesis of useful drugs. These plant parts are leaves, twig, stem, stem bark, fruit, seed, flower, and root bark and are observed to have various regulative effects in the human and animal body when consumed internally or applied externally or topically. Aju Mbaise (Mbaise wraps) are combinations of two or more different plant species tied together and the extracts used in the treatment of different ailments in Mbaise land, Imo State, Nigeria. These wraps are sold in Mbaise communities and the adjoining markets within Imo Abia, and Rivers States. Understanding the different plant species in the wraps, and their scientific names will go a long way to enhancing the search for an alternative source for the treatment of human

diseases and making raw materials available for our pharmaceutical industries. Therefore, this study investigates the Ethno-botanical uses and Taxonomic composition of Aju Mbaise (Mbaise wraps) obtained from Umueme (Okwu Nguru) and Umuorianu (Okwunakuwa Uvuru) communities in Aboh Mbaise Local Government Area, Imo State, Nigeria.

MATERIALS AND METHODS

Wrap Collection: Visits were made to Umueme (Okwu Nguru) and Umuorianu (Okwunakuwa Uvuru) communities in Aboh Mbaise Local Government Area, Imo State, Nigeria. A total of seven (7) wraps were collected from these communities with the help of traditional medicine practitioners. These Traditional medicine practitioners help to collect and assemble the plant specimens into different combinations (wraps) "Aju Mbaise" used in the treatment of different ailments in the area. The photographs of the plants were taken with a digital camera at the point of collection.

Interviews: We interviewed 10 Traditional medicine practitioners from these communities. From the

interviews information on the wraps used in the treatment of different ailments in the communities was obtained and documented.

Plant Identification: The vernacular names of the plants in each wrap were obtained from the Traditional medicine practitioners while the wraps were transported to the University of Port Harcourt Herbarium for proper identification by the Curator of the University. Each plant species in the Aju Mbaise were opened and the individual plants were identified by the Curator and specimens voucher deposited in the herbarium.

Extraction and administration: The wraps are boiled in water, and the water extract is taken twice daily (morning and evening) till the symptoms of the ailment disappear.

RESULTS AND DISCUSSION

A total of 31 plant species belonging to 24 families were identified in the wraps collected from the study area (Table 1).

Table 1: List of plant species identified in the different Mbaise wraps

S/N	Species name	Family name	Local/vernacular name	No. of ailments
1	Acanthus montanus (Nees) T. Anders	Acanthaceae	Agameebu	3
2	Alternanthera bettzickiana (Regel) G.Nicholson	Amaranthaceae	Ogwuobara	4
3	Barteria nigritana Hook.f.	Passifloraceae	Egbe oji	3
4	Centrosema pubescens Benth.	Fabaceae	-	1
5	Cnestis ferruginea DC.	Connaraceae	Okpu nkita, Amunkita, Okpuocha nkita	5
6	Combretum sp.	Combretaceae	Alami	1
7	Combretum zenkeri Engl. & Diels	Combretaceae	Alami	1
8	Craterispermum cerinanthum Hiern	Rubiaceae	Ozoh	4
9	Dalium guineensis Willd.	Fabaceae	Nkwa	1
10	Dichapetalum sp.	Chailletiaceae		1
11	Diodia sarmentosa Sw.	Rubiaceae	Ukumorofo, Ukumo fo	1
12	Elaeis guineensis Jacq.	Aracaceae	Nwu, Nkpolaku, Akpalanu	1
13	Heterotis rotundifolia (Sm.) Jac-Fél.	Melastoataceae	Nsonaala, Nchichara eku	1
14	Hurangona madagascarensis Lam. ex Poir.	Hypericaceae	Oturu	1
15	Justicia carnea Lindl.	Acanthaceae	-	2
16	Marantochloa congensis (K.Schum.) Léonard & Mullend	Marantaceae	Achara	2
17	Napoleona imparalis P. Beauv.	Lecythidaceae	Isi efe, Ntum	4
18	Nephrolepsis exaltata (L.) Schott	Nephrolepidaceae	Akoro	3
19	Oxytenanthera abyssinica (A. Rich.) Munro	Poaceae	Achara	3
20	Palisota hirsuta (Thunb.) K. Schum.	Commelinaceae	Ipele oku, Ikpere aturu	3
21	Persea americana Mill	Lauraceae	Ube bekee, Ube-oyibo	2
22	Psidium guajava Linn.	Myrtaceae	Govam Ugwoba	2
23	Schwenckia americana L.	Solanaceae	Ota	2
24	Scleria naumanniana Boeck.	Cyperaceae	-	3
25	Selaginellia myosurus (Sw.) Alston	Selaginellaceae	Akuru,akoro	2
26	Sida linifolia Juss.	Malvaceae	Nwokadaghibeya	2
27	Sida rhomboidea Linn.	Malvaceae	Au uzo mbo,Udo Agheregha	3
28	Triclisia subcordata Oliv.	Menisperaceae	Ogbanaelu	2
29	Uvadendruim sp.	Annonaceae	-	1
30	Uvaria chamae P. Beauv.	Annonaceae	Mmimi ohia	1
31	Uvaria sp.	Annonaceae		1

Annonaceae family occurred more in the wraps followed by Acanthaceae, Combretaceae, Fabaceae, Malvaceae, and Rubiaceae. The remaining plant families have one species each. The various ailments these plants are used to treat, vernacular, and scientific name of the plants are presented in Tables 2 to 7.

Hypertension, typhoid, and malaria: Two plants namely Triclisia subcordata and Justicia carnea are used in the treatment of hypertension, typhoid, and malaria (Table 2). The whole plant (leaves and twig or the vines) is used. For the treatment of hypertension boiled extract of T. subcordata (Whole plant) and J. carnea (Leaves and twig) is administered to the patient morning and evening till the symptoms disappear.

Induce weight loss: A combination of nine plant species belonging to eight different plant families is used to induce weight loss in the study area (Table 3). These plants are prepared by boiling the combination of these plants and administered daily to the patient till the desired weight is lost by him.

Table 2: Plant species in the wrap used in the treatment of hypertension, typhoid, and malaria

hypertension, typhola, and maiaria			
Species name	Part used		
Hypertension			
T. subcordata Oliv.	Whole plant		
J. carnea Lindl.	Leaves and twig		
Typhoid and malaria			
J. carnea Lindl. Leaves and twig			
T. subcordata Oliv.	liv. Leaves and vines		

Boost fertility in females: A total of 17 plant species belonging to 16 genera and 14 families were found in the wrap used to boost fertility in the study area (Table 5). This combination of plants (leaves, twig, and whole plant) is boiled, filtered, and the filtrate taken twice

daily (morning and evening) warm till the patient conceives.

 Table 3: Plant species in the wrap used to induce weight loss

Species name	Family name	Part used
Craterispermum cerinanthum	Rubiaceae	Leaves/twig
Scleria naumanniana	Cyperaceae	Whole plant
Psidium guajava	Myrtaceae	Leaves and twig
Nephrolepsis exaltata	Nephrolepidaceae	Leaf fronds
Sida rhombifolia	Malvaceae	Leaves and twig
Diodia sarmentosa	Rubiaceae	Leaves and twig
Cnestis ferruginea	Connaraceae	Leaves
Alternanthera bettzickiana	Amaranthaceae	Leaves and twig
Oxytenanthera abyssinica	Poaceae	Entire plant

Post-partum (immediately after birth): Seventeen (17) plant species belonging to 16 genera and 15 families were found in the wrap used to boost fertility in the study area (Table 6). This combination of plants (leaves, twig, and whole plant) is boiled, filtered, and the filtrate taken warm twice daily (morning and evening) immediately after birth.

Treatment of Diabetes: A total of 13 plant species belonging to 13 genera and 13 families were found in the wrap used to treat diabetes in the study area (Table 7). This combination of plants (leaves, twig, and whole plant) is boiled, filtered, and the filtrate is taken twice daily (morning and evening) till the patient recovers.

Treatment of Arthritis: Six (6) plant species belonging to 6 genera and 6 families were found in the wrap used to treat arthritis in the study area (Table 8). This combination of plants (leaves, twig, and whole plant) is boiled, filtered, and the filtrate is taken twice daily (morning and evening) till the patient recovers.

Table 5: Plant species in the wrap used to boost fertility

Species name	Family name	Part used
Napoleona imparalis	Lecythidaceae	Leaves /twig
Elaeis guineensis	Aracaceae	Leaves(Frond)
Persea americana	Lauraceae	Leaves
Nephrolepis exaltata	Nephrolepidaceae	Fronds
Craterispermum cerinanthum	Rubiaceae	Leaves /twig
Marantochloa congensis	Marantaceae	Leaves /twig
Sida rhomboidea	Malvaceae	Leaves/ twig
Uvaria chamae	Annonaceae	Leaves /twig
Heterotis rotundifolia	Melastoataceae	Leaves and stem
Scleria naumanniana	Cyperaceae	Whole plant
Sida linifolia	Malvaceae	Leaves/twig
Psidium gavaja	Myrtaceae	Leaves/twig
Alternanthera bettzickiana	Acanthaceae	Twig
Annona sp	Annonaceae	Twig
Dalium guineensis	Fabaceae-Caesalpiniaceae	Twigs
Barteria nigritiana	Passifloraceae	Twig
Acanthus montanus	Acanthaceae	Leaves/twig

Medicinal plants have been employed in the management of different ailments in different communities particularly in Nigeria and West Africa at large (Burkill, 1985, 1994, 1995, 1997, 2000; Ribeiro *et al.*, 2018; Alhaji *et al.*, 2018). Some of these human disorders include tissue inflammations

(Erhenhi, 2016; Barros et al., 2016; Ribeiro et al., 2018), Diabetes, and Weight loss (Ajayi and Moody, 2015; Hu et al., 2008). These plants belong to various plant families and are used in West Africa for different medicinal purposes (Table 9). Existing reports have shown that plants belonging to Fabaceae, Combretaceae, Anacardiaceae, Amaranthaceae, and Mytaceae are good for the treatment of arthritis (Omolola et al., 2017; Salihu et al., 2018; Kaur et al., 2012; Nwachukwu et al., 2010; Burkill, 1985, 1994, 1995, 1997, 2000). Other medicinal plants including Actaea racemosa, officinale (Kaur et al., 2012), Asimina triloba, Citrus aurantifolia, and Psidium guajava also have shown anti-rheumatoid/arthritis properties (Nwachukwu et al., 2010). Based on the seven (7) Mbaise wraps, the plant family Annonaceae constituted 9.68% of the total plant family. This is followed by Acanthaceae, Combretaceae, Fabaceae, Malvaceae, and Rubiaceae with 6.45% each while Chailletiaceae and other families have 3.23% each.

In Idoma (Benue State), Alhaji *et al.* (2018) reported that a total of 37 plant species belonging to 22 families were used in herbal antimalarial recipes. Among these species, Fabaceae and Combretaceae were most represented with 4 species each (10.8%), followed by Rubiceae, Malvaceae, Euphobiciceae, Anarcardiaceaea, Moraceae, Meliceae, Annonaceae, Phyllanthaceae, and Lamiaceae represented by 2 species each (5.4%). This confirms the multiple uses of the plants in Combretaceae, Fabaceae, Annonaceae, and Rubiaceae families by the rural communities in the management of diseases (Alhaji *et al.*, 2018; Omolola *et al.*, 2017).

Table 6: Plant species in the wrap taken immediately after birth (post-partum)

Species name	Family name	Part used
Schwenckia americana	Solanaceae	Leaves/twig
Scleria naumanniana	Cyperaceae	Whole plant
Selaginella myourus	Selaginellaceae	Whole plant
Nephrolepis exaltata	Nephrolepidaceae	Leaves/twig
Cnestis ferruginea	Connaraceae	Leaves
Oxytenanthera abyssinica	Poaceae	Leaves/twig
Alteranthera bettzickiana	Amaranthaceae	Leaves/twig
Acanthus montanus	Acanthaceae	Leaves/twig
Sida rhomboidea	Malvaceae	Leaves/twig
Cnestis sp. Juss.	Connaraceae	Leaves
Palisota hirsuta	Commelinaceae	Leaves/twig
Persea americana	Lauraceae	Leaves
Napoleona imparalis	Lecythidaceae	Leaves /twig
Craterispermum cerinanthum	Rubiaceae	Leaves/twig
Marantochloa congensis	Marantaceae	Leaves/twig
Hurangona madagascarensis	Hypericaceae	_
Sida linifolia	Malvaceae	Leaves/twig

Table 7: Plant species in the wrap used in the treatment of diabetes

Species name	Family name	Part used
Barteria nigritana	Passifloraceae	Leaves/twig
Oxytenanthera abyssinica	Poaceae	Leaves/twig
Acanthus montanus	Acanthaceae	Leaves/twig
Craterispermum cerinanthum	Rubiaceae	Leaves/twig
Combretum sp.	Combretaceae	Leaves
Palisota hirsuta	Commelinaceae	Leaves/twig
Napoleona imparalis	Lecythidaceae	Leaves /twig
Cnestis ferruginea	Connaraceae	Leaves
Uvariodendron sp	Annonaceae	Leaves
Alteranthera bettzickiana	Amaranthaceae	Leaves
Centrosema pubescens	Fabaceae-Papilionaceae	Leaves/twig
Selaginellia myosurus	Selaginellaceae	Whole plant
Schwenckia americana L.	Solanaceae	Leaves/twig

Table 8: Plant species in the wrap used in the treatment of arthritis

Species name	Family name	Part used	
Cnestis ferruginea DC.	Connaraceae	Leaves	
Napoleona imparalis	Lecythidaceae	Leaves/twig	
Combretum zenkeri	Combretaceae	Leaves and twig	
Barteria nigritana	Passifloraceae	Leaves and twig	
Palisota hirsuta	Commelinaceae	Leaves/twig	
Dichapetalum sp.	Chailletiaceae	Leaves	

Table 9: Previous reports on the plant uses

Table 9: Previous reports on the plant uses Species name Medicinal uses		
Species name		
Acanthus montanus (Nees) T. Anders	Boil, Abscesses, Cough and Chest complaints, Purgative, Emetic, Upset tummy, Morning sickness, Rheumatism, Urethral discharge	
Barteria nigritana Hook. f.	Sores and Itch	
Centrosema pubescens Benth.	Skin diseases	
Cnestis ferruginea DC.	Pyorrhea, Headache, Laxative, Bronchitis, Abortifacient, Dysmenorrhea, fever, Heartburn, Pains, Mange, Asthenia, Sedative, Ointment, Urethral discharge, Snake bite, Migraine, Sinusitis	
Combretum zenkeri Engl. & Diels	Chest and liver pain, Toothache, Leprosy, Child-delivery, Worm treatment, Relieve menstrual pain, Dysentery, Male sterility, Oedemas	
Dalium guineensis Willd.	Oedema, Toothache, Tumours, Eyes, Fever, Diarrhea,	
Diodia sarmentosa Sw.	Fever, pains, Ulcers, Expectorant, Venereal diseases, Stimulate foetus, Dysentery, Rheumatism, Promote flow of milk, Pusy abcesses	
Elaeis guineensis Jacq.	Gonorrhea, Menorrhagia, Pain, Diuretic, Antemetic, Laxative, Bronchitis, Cicatrize, Analgesics, Anti-syphilitic, Gynecological, Leucorrhoea, Anti-abortifacient, Ecobolic, Emollient, Excipient, Inflammation, Furuncles, Abscesses, Sprains, Poison—antidote	
Heterotis rotundifolia (Sm.) Jac-Fél.	Astringent, Tonic for anemia, Intestinal upset, Cough, Cold, Sores, Headache, Sinusitis, Conjunctivitis, Toothache, Migraine, Jaundice, Blennorrhoea, Rheumatism or swellings, Aid to conception	
Justicia carnea Lindl.	Inflammation, Gastrointestinal tract infection, Rheumatism, Arthritis	
Marantochloa congensis (K. Schum.)	Over abundant and painful mmenses, Purgative, Boils, Sedative for	
Léonard & Mullend	epileptic attack or fits of madness, Skin-eruptions, Aphrodisiac, Stomach-ache, Intestinal disorders, Expectorant, Emetic, poison antidote	
Napoleona imparalis P. Beauv.	Cough, Blennorrhoea, Diarrhoea, Oedemas, Rheumatism, Asthma	
Nephrolepis exaltata (L.) Schott	Adenitis and facilitates removal of thorns, Splinters, Sores, Wounds, Stomach pain, Cough, Colds, Anodynal, Embrocation, Feverish pain, Stiffness, Dysentery, Anti-abortifacient, Blennorhagia	
Oxytenanthera abyssinica (A.Rich.) Munro	Dysentery, Diabetes, Colic, Rheumatism, Skin diseases, Polyuria, Oedema, Albuminuria	
Palisota hirsuta (Thunb.) K.Schum.	Analgesic, Antiseptic, Furuncles, Whitlow, Craw-Craw sores, Contusion, Fractures, Adenites pain, Cough, Bronchitis, Chest pain, Oedemas, Urethral discharge, Yaws, Guinea worm sores, Difficult birth, Female sterility, Antemetic, Antidysenteric, Aphrodisiac, Aid conception, Deafness, Earache	
Persea americana Mill	Stomachic, Vulnerary, Astringent, Anti-dysenteric, Antibiotic, Vitamin A & B, Aphrodisiac, Emmenagogue, Insecticidal capacity.	
Psidum guajava Linn.	Diarrhoea, Coughs, Constipation, dysentery, Menstruation, Stomach, Meals, vitamin C, Ca, Phosporus	
Schwenckia americana L.	Drug preparation for babies, Poison antidote, antitussive, Cough medicine for children, Mouth wash as oral injection, Laxative for babies, Rhumatic pain, Arthritic and Swellling condition, Strenthening tonic	
S. naumanniana Boeck.	Relieve toothache,	
Selaginella myrosus (Sw.) Alston	Chicken-pox, Rheumatism, Swollen glands ,Bronchitis, Blennorrhagia, Hematuria, Fever, Invigorant in fatigue, pain	
Sida linifolia Juss.	Vulnerary properties, Skin diseases, Male sterility	
Sida rhomboidea L.	Emollient, Purgative, Sores, Ulcers, Cut, Lumps,	
Triclisia subcordata Oliv.	Oedema, Anaemia, Diarrhea, Pains	
Uvaria chamae P.Beauv.	Fever, Bronchial troubles, Stomachic, Nasal instillation for epileptic fits, Fainting, Small pox, Liver, Kidney and bladder infection, Purge, Febrifuge, Cough, Gonorrhea, Antidote for food poisoning	

Source: Burkill, 1985, 1994, 1995, 1997, 2000

Many plant species can be used in the management of more than one ailment. This is associated with the effectiveness and potency of such plant species in disease management. Furthermore, it indicates that if properly and well-utilized, such plant species will be of much medicinal importance (Mike *et al.*, 2014). In our study area, *Cnestis ferruginea* (Connaraceae) was used in the management of five ailments, *Alteranthera bettzickiana* (Amaranthaceae), *Craterispermum cerinanthum* (Rubiaceae), and *Napoleona imparalis* (Lecythidaceae) are found in four wraps used to treat

different ailments while Acanthus montanus (Acanthaceae), Barteria nigritana (Passifloraceae), Nephrolepis (Nephrolepidaceae), exaltata Oxytenanthera abyssinica (Poaceae), Palisota hirsuta (Commelinaceae), Scleria naumanniana (Cyperaceae), and Sida rhomboidea (Malvaceae) in three ailments each. J. carnea, Marantochloa congensis, Persea americana, Psidium guajava, Schwenckia americana, Selaginellia myosurus, Sida linifolia, and T. subcordata Oliv., used in two ailments while the remaining species are used to treat only one

ailments each. This suggests that these plants used in the management of three to five ailments are the some of the most medicinally effective plants in the study area.

Conclusion: Our work revealed seven Mbaise wraps containing 31 plant species in 24 families used in the treatment of hypertension, typhoid, malaria, boost fertility in females, taken immediately after birth (post-partum), treatment of diabetes, treatment of arthritis, and induce weight loss. Annonaceae family was the dominant, followed by Acanthaceae, Combretaceae, Fabaceae, Malvaceae, and Rubiaceae. Cnestis ferruginea occurred in five wraps while Alteranthera bettzickiana, Craterispermum cerinanthum, and Napoleona imparalis occurred in four wraps. These plant species and families are the most effectively used plant groups in the study for the treatment of these diseases.

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