Preliminary Investigations on the Ethnomedicinal Plants of Akoko Division, South West Nigeria

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Abstract

An account of sixty ethnomedicinal plant species belonging to thirty two families used extensively in different parts of Akoko division of Ondo State, South West Nigeria is highlighted. The parts of the plant species used in the treatment of various diseases ranged from leaves, stem, root, and bark to fruit only, or a combination of two or more parts from a single species or with those of other species. Their mode of application has also been discussed.

Keywords: Ethnomedicinal plants, Akoko, Nigeria

1. Introduction

During the past decade, traditional medicinal practices have become a topic of global relevance. In many developing nations, a significant number of indigenous populations rely on medicinal plants to meet their health care needs. According to Lewis and Elvin-Lewis (2003), botanically derived medicinals have played a major role in human societies throughout history and prehistory and people have used plants as medicine since the beginning of civilization, as they were believed to have healing powers (Connie and King 2003).

The use of plants in the tropical and subtropical regions is diversified and most of the uses are for medicine, source of food, clothing and shelter. But the medicinal uses of plants are rapidly declining among the present generation of local people as a consequence of modernization and civilization (Cox 2005). The younger generation is showing little interest in learning this valuable science of healing. Usage of medicinal plants to cure diseases has also been much influenced by religious practices (Trease and Evans 1989, Wambebe 1999).

All over the world, several ethnobotanical studies focusing on medicinal plants have been documented (Ekpendu *et al*. 1998, Balansard and Timon 2000, Singh and Singh 2001, Wang *et al*. 2002, Cox 2005, Kumar *et al*. 2005, Pei 2005). But in Nigeria, very little information about ethnobotanical studies has been documented (Gill 1992, Sofowora 1993, Igoli *et al* 1999). Therefore the need for proper documentation of traditional medicinal practices among the Akoko people in Nigeria where there has been a dearth of published information is immediately called for and this accounts for the rationale to undertake the present study.

2. Material and methods

2.1 Study area

Akoko region is situated between Longitudes 5.18^0 and 5.52^0E and Latitudes 7.18^0 and 7.47^0N. It is characterized by a mixture of a lowland rainforest and savannah vegetation with an annual rainfall ranging 800 - 1500mm and a mean annual temperature of 28^0C - 35^0C. It covers four local government areas and occupies the Northeastern side of the present Ondo State, Nigeria. It has an area of about 1360 kilometers (Akoko North Information Division, 1978). It is bounded in the north and northeast by Kabba in Kogi State, and to the west and North-west by Ekiti central and North respectively.

2.2 Methods

Plant collection and identification: A total of 180 questionnaires were administered and interviews were conducted with the old and local traditional healers in forty villages in all the four local government areas that comprise the study area. The author accompanied some of the respondents to the field to collect the plant materials. Throughout the interviews, the local names of the plants, the parts used, method of preparation of

crude drug from the plants, mode of application, dosage and duration of treatment (where specific) were recorded. Only species consistently used to treat the same illness by several healers/villages across the study area were selected. In cases where the plant species were not immediately identifiable with botanical names, they were brought to the Department of Plant Science and Biotechnology laboratory, Adekunle Ajasin University, Akungba- Akoko, where they were identified using relevant keys.

Herbarium voucher specimens were prepared following the standard techniques (Martin 1995, Lawrence 1967) and were thereafter deposited in the Herbarium of the Department of Plant Science and Biotechnology, Adekunle Ajasin University, Akungba- Akoko.

3. Results and discussion

Plant species belonging to sixty species and thirty-two families were identified as being used by most of the people of this area for the treatment of various common diseases. Table 1 showed the list of the species, botanical name, local name, uses and parts used. Some of these plants are cultivated by the people themselves while others grow in the wild.

Of the 32 different families which the people of this area consult for medicinals, the family Euphorbiaceae has the largest number of species (eight), followed by Asteraceae with (six) species while the families Caesalpiniaceae, Fabaceae, and Anacardiaceae recorded three species respectively.

This study has revealed that traditional medicinal practices have a wide acceptability among the Akoko people probably because they believe in its effectiveness and also due to their lack of access to modern health care delivery system. Also the unavailability and unaffordability of orthodox drugs may also have contributed largely to preference of traditional medicine over the orthodox drugs.

The medicinal uses are varied and the plant species parts that are used range from leaves, roots, stem, bark to fruits only, or a combination of two or more in a species or with those of other species.

For common diseases like cuts and wounds, *Milicia excelsa, Chromolaena odorata, Aspilia africana, Manihot esculenta* are used for fast healing of wounds. This may only indicate that these plants contain therapeutic compounds such as vitamins c and some amino acids which are responsible for the fast healing of wounds. Others like eye defects and ear infections are treated using *Alchornea cordifolia* and *Bryophyllum pinnatum, Jatropha curcas* respectively. Diseases such as coughs are cured using varieties of taxa such as *Abrus precatorius, Ocimum gratissimum, Garcinia kola* and *Terminalia macroptera*. *Euphorbia hirta* is used for the treatment of asthma while *Cassia alata* and *Parquetina nigrescens* are used as tonic (blood purifier). *Cymbopogon citratus, Blighia sapida* and *Ocimum gratissimum* are also effective in the relief of chest pains.

Some plants are believed to contain chemicals which possess anti-malarial properties such as *Chromolaena odorata, Mangifera indica, Citrus aurantifolia Psidium guajava, Nauclea latifolia, Bridelia ferruginea, Cymbopogon citratus, Anacardium occidentale, Alstonia boonei* and *Azadirachta indica*. These plants are not commonly used individually to cure malaria but two or more of the plants are combined together for the treatment of malaria. *Khaya senegalensis* is used to cure typhoid fever while *Acanthospermum hispidus* is used for yellow fever. Others such as *Azadirachta indica* and *Bridelia ferruginea* are combined together for the treatment of Jaundice.

Critical ailments such as epilepsy are cured using the leaves of *Bryophyllum pinnatum* and *Emilia sonchifolia* when made as concoction and administered orally to the patient while scrotum elephantiasis is cured with the leaves of *Newbouldia laevis* and tuberculosis with *Acanthospermum hispidus* leaves. The people of Akoko also use *Azadirachta indica* to cure small pox and chicken pox. Diabetes is cured using the root extract of *Urena lobata*. *Ficus capensis* and *Pupalia lappacea* are used for the treatment of Leprosy while *Cajanus cajan and Carica papaya* are used for hypertension and ulcer respectively. *Bridelia ferruginea* and *Anacardium occidentale* found to be effective in the treatment for coated tongue.

Skin infections like eczema, pimples, rashes are cured by rubbing the leaves of *Jatropha gossypifolia, Borreria* sp., *Hymenocardia acida* and *Allamanda cathartica* on the infected parts of the skin. *Acalypha hispida* is known to confer anti-bacterial and anti-fungal properties and therefore leaf decoction is administered to infants for skin rashes.

For sexually transmitted diseases, the people of this area relies on *Vernonia amygdalina* for vagina itch and *Azadirachta indica* for syphilis. Plants such as *Alchornea cordifolia* and *Carica papaya* are used for the treatment of gonorrhoea.

Stomach disorders are cured using varieties of plants viz: *Vernonia amygdalina, Bidens pilosa, Terminalia*

macroptera and *Spondias mombin*; Kwashiorkor and gastroenteritis are cured using *Daniella oliveri* while constipation and indigestion are treated using *Parkia biglobosa* and *Ananas comosus. Momordica charantia*, *Nauclea latifolia* and *Vigna ungiculata* are used as vermifuge. Diarrhoea and dysentery are treated with *Ocimum gratissimum, Bidens pilosa* and *Allamanda cathartica*.

Some plants are also used for preventive purposes, for example, seven very young twigs of *Annona senegalensis* and seven seeds of *Aframomum melegueta* are eaten to prevent snake bite. Also plants such as *Nicotiana tabacum* and *Datura metel* are planted around houses to prevent and repel the snakes. The indigenous people of Akoko region believe that some plants could confer longevity (increase their life span), for example, *Spondias mombin* is used to bath infants because its name "iyeye" means survival and *Garcinia kola* is used during naming ceremonies because its name "orogbo", means long life. *Bryophyllum pinnatum* may also be put on window frames as it is believed that since the plant does not die easily, whoever that keeps it will live long.

The people of this area use plants such as *Glyphaea brevis* and *Abrus precatorius* to induce labour, while *Alchornea cordifolia* and *Heliotropium indicum* are used for foetal development and arrest abortion or for miscarriage respectively.

4. Conclusions and recommendation

This study has revealed that ethno-medicinal practices are well accepted by the people of this area. Information made available by the respondents revealed that the uses of these plants are almost unaltered as it was used in the past and may likely continue to remain in the future if properly documented and the plants are conserved. It is suggested that an enduring and sustainable conservation efforts be put in place by the community and government to safeguard these important medicinal plants.

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Table 1. List of the ethno-medicinal plant species

Botanical name (Family), Local Name and Voucher number	Plant part(s) used/mode of administration	Disease(s) / ailment(s)
Abrus precatorius L. (Fabaceae) 'Oju-ologbo' PSHS 280	Powdered leaves, root extract, seed infusion	Cough, convulsion, labour inducer, abortifacient, rheumatism
Acalypha hispida Burm (Euphorbiaceae) 'Jiwene' PSHS 101	Leaves, stem soaked and boiled in water	Skin rashes
Acanthospermum hispidum DC. (Asteraceae) 'Dagunro' PSHS 180	Leaf juice added to palmwine and little potash	Yellow fever, tuberculosis
Aframomum melegueta K. Schum. (Zingiberaceae) 'Ataare' PSHS 203	Fruit, leaves. Leaf decoction	Small pox, chicken pox, catarrh
Alchornea cordifolia (Schym. & Thorne) Muell. Arg. (Euphorbiaceae) 'Ipa' PSHS 234	Dried leaves grinded	Eye defect, gonorrhoea, foetal development
Allamanda cathartica L. (Apocynaceae) 'Fulewa aseje' PSHS 208	Leaves, root boiled in water	Dysentery, pimples, insect bites.
Alstonia boonei De wild (Apocynaceae) 'Ahun' PSHS 122	Bark soaked in water or palmwine	Fever
Amaranthus spinosus L. (Amaranthaceae) 'Tete-elegun' PSHS 188	Leaves decoction with little salt	Abdominal pain, snake bite, piles, snuffs
Anacardium occidentale L. (Anarcadiaceae) 'Kasu'	Leaves, bark, fruit concoction	Malaria, coated tongue / oral thrush
Ananas comosus (L.) Merr. (Bromeliaceae) 'Ope-oyinbo' PSHS 123	Unripe fruit eaten	Constipation
Annona senegalensis Pers. (Annonaceae) 'Abo' PSHS 144	Young twig, bark grinded	Antidote to snake poison
Aspilia africana (Pers.) C.D. (Asteraceae) 'Yunyun' PSHS 218	Fresh leaves grind as paste	Stops bleeding
Azadirachta indica A. Juss. (Meliaceae) 'Dongoyaro' PSHS 266	Leaves, bark, seeds. Decoction	Malaria, syphilis, jaundice, liver complaint, skin diseases
Baphia nitida Lodd. (Fabaceae) 'Irosun'	Leaves, stem chewing	Robbers identification
Bidens pilosa L. (Asteraceae) 'Abere oloko' PSHS 167	Dried crushed flowers, leaves decoction	Diarrhoea, eye and ear complaints, abdominal disorders, rheumatism
Blighia sapida Koenig. (Sapindaceae) 'Isin' PSHS 222	Bark, fruit extract	Chest pain
Bridelia ferruginea Benth. (Euphorbiaceae) 'Igi ira' PSHS 264	Bark extract with water or local gin	Coated tongue, jaundice, arrow poison, fever
Bryophyllum pinnatum Lam. (Crassulaceae) 'Eleti' PSHS 171	Leaf extracts, whole plant	Epilepsy, ear ailments, longevity
Caesalpinia pulcherrima (L) Sw. (Caesalpiniaceae) 'Eko omode' PSHS 107	Leaves & bark decoction, seeds grind to powdery form	Purgative, tonic in nervous ailments
Cajanus cajan (L.) Millsp. (Fabaceae) 'Sese' PSHS 110	Leaves decoction, seeds	Hypertension

Botanical name (Family), Local Name and Voucher number	Plant part(s) used/mode of administration	Disease(s) / ailment(s)
Carica papaya L. (Caricaceae) 'Ibepe' PSHS 153	Fruits, leaves, root decoction	Ulcer, gonorrhoea, abortifacient
Cassia alata L. (Caesalpinaceae) 'Asunwon' PSHS 233	Leaves dried and grind to powdery form	Eczema, blood purifier, worm expeller
Chromolaena odorata L. (Asteraceae) 'Akintola' PSHS 100	Leaves boiled in water & leaf extract	Fever, to check bleeding
Citrus aurantifolia (Christm) Swinale. (Rutaceae) 'Osan wewe' PSHS 152	Leaves, bark boiled in water	Malaria, nasal decongestion, refrigerant
Cola acuminata (P. Beauv). Schott & Endl. (Sterculiaceae) 'Obi abata' PSHS 225	Bark, fruit extract, fruit eaten	Retentive memory, wound healing, stimulant
Cymbopogon citratus(DC))Stapf. (Poaceae) 'Waapa' PSHS 199	Leaves, stem boiled in water	Cough, fever, chest pain, refrigerant
Daniella oliveri (Rolfe) Hatch & Dalz (Caesalpinaceae) 'Iya' PSHS 231	Young leaves fermented for 3 days for extract	Kwashiorkor, gastroenteritis
Datura metel L. (Solanaceae) 'Gegemu'PSHS 289	Matured fruit macerated and soaked in water	Snake and termite repellant, insomnia, stimulant
Emilia sonchifofia (L.)DC. (Asteraceae) 'Odundun odo'	Leaves extract with local gin	Epilepsy, ear & eye ailments, headache
Erythrophleum suaveolens (Guill. & Perr.) Brenan. (Fabaceae) 'Obo' PSHS 139	Bark soaked in water	Poison
Euphorbia hirta L. (Euphorbiaceae) 'Bije'PSHS 104	Flower & fruit extract	Asthma, respiratory tract inflammations, arrow poison
Ficus capensis Thumb. (Moraceae) 'Opoto' PSHS 272	Leaves, root extract	Leprosy
Garcinia kola Heckel. (Clusiaceae) 'Orogbo' PSHS 288	Root, mature fruit eaten	Cough, longevity
Glyphaea brevis (Spreng.) Monachino (Tiliaceae) 'Atori' PSHS 144	Leaves extract	Labour inducer
Gossypium hirsutum L. (Malvaceae) 'Owu'PSHS 103	Fruit (cotton)	Clean ear, cover wound
Heliotropium indicum L. (Boraginaceae) 'Apari igun' PSHS 140	Leaves made into paste	Suppuration, arrest abortion (miscarriage),cure for unconsciousness
Hymenocardia acida Tul. (Euphorbiaceae) 'Kelukeju' PSHS 201	Leaves, bark decoction	Skin diseases, spice
Hyptis suaveolens Poit. (Lamiaceae) 'Jogbo Arunfofo' PSHS 198	Fresh leaves squeezed to obtain liquid	Mosquito repellant, headache
Jatropha curcas L. (Euphorbiaceae) 'Lapalapa dudu' PSHS 273	Leaves, stem juice	Eardrop, wrapper
Gossypifolia L. (Euphorbiaceae) 'Lapalapa pupa' PSHS 116	Leaves decoction	Skin infections
Khaya senegalensis (Desu) A. Juss. (Meliaceae)	Bark, stem bottled with dry	Typhoid fever, dysentery

Botanical name (Family), Local Name and Voucher number	Plant part(s) used/mode of administration	Disease(s) / ailment(s)
'Oganwo' PSHS 211	gin	
Mangifera indica L. (Anacardiaceae) 'Mangoro' PSHS 205	Leaves, bark, fruit extract	Malaria treatment
Manihot esculenta Grantz. (Euphorbiaceae) 'Ege' PSHS 165	Leaves juice	Stops bleeding
Milicia excelsa (weths) Bth. (Moraceae) 'Iroko' PSHS 135	Latex, dried stem wood burnt into charcoal	Wound healing, piles
Momordica charantia L. (Cucurbitaceae) 'Ejinrin wewe' PSHS 114	Leaves, root, seed soaked in water	Abortifacient, vermifuge, bullet resistance
Nauclea latifolia Sm. (Rubiaceae) 'Egbesi' PSHS 116	Leaves, root decoction	Malaria, vermifuge
Newbouldia laevis (P. Beauv.) Seaman ex Bureau. (Bignoniaceae) 'Akoko' PSHS 228	Leaves, stem, bark. Boil in water or extract using local gin	Scrotum elephantiasis
Nicotiana tabacum L. (Solanaceae) 'Taba' PSHS 287	Whole plant, leaves dried	Snake repellant, stimulant
Ocimum gratissimum L. (Lamiaceae) 'Efinrin' PSHS 120	Leaves, stem soaked in water	Diarrhea, cough, chest pain, bronchitis, spice
Parkia biglobosa (Jacq)Benth. (Mimosaceae) 'Iru' PSHS 206	Fruit, bark macerated	Constipation, spice
Parquentina nigrescens (Atzel) Bullock. (Papilionaceae) 'Ogbo' PSHS 283	Leaves extract with little salt	Blood purifier (tonic), stops excessive menstrual flow
Psidium guajava L. (Mytaceae) 'Girafa' PSHS 224	Leaves, bark boil in water	Fever, diarrhea, gastro-enteritis
Pupalia lappacea (L.) Juss. (Amarathaceae) 'Ema-agbo' PSHS 102	Leaves, root extract	Leprosy
Spondias mombin L. (Anacardiaceae) 'Iyeye, ekikan' PSHS 294	Bark soaked in local gin	Stomach ache, longevity
Talinum triangulare (Jacq.) Willd. (Portulaceae) 'Gbure' PSHS 236	Leaves concoction	Purgative
Terminalia macroptera Guill. &Pers. (Combretaceae) 'Udi' PSHS 253	Young leaves for concoction	Cough, stomach pain
Urena lobata L. (Malvaceae) 'Ilasa-omode' PSHS 251	Root extract	Diabetes, expectorant
Vernonia amygdalina Del. (Asteraceae) 'Ewuro' PSHS 149	Leaves, stem grinded/crushed	Stomachache, vagina itching, laxative, appetizer
Vigna unguiculata (L) Walp. (Fabaceae) 'Eree' PSHS 162	Fruit (seed) boiled	Vermifuge