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Ethnomedicinal Survey of Botanicals Used in Treating Sexually Transmitted Diseases in Ekiti State, Nigeria

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ABSTRACT

This paper focuses on the botanicals used in the treatment of sexually transmitted diseases in Ekiti State, Nigeria. The authors identified 49 plants belonging to 30 angiosperm families that were being used by the natives of Ekiti State for the cure of sexually transmitted diseases. Most of the wild species were rare or not very abundantly distributed in nature. The proportion of cultivated to wild species, however, was relatively low. Species that were under cultivation by the natives were being grown largely for reasons other than medicinal value. The methods of extraction were mostly predatory and annihilative. Considerable proportions of the identified botanicals were obtained from the forest. The need for the conservation of most of the species cannot be over emphasized. Strategies towards the attainment of this goal were proposed.

INTRODUCTION

There has been an increase in worldwide realization of the use of medicinal plants in various traditional health systems of developing countries. For example, recent estimates by the World Health Organization (WHO) revealed that about 80% of the population in Africa relies on traditional medicine of which the botanicals constituted greater components. It is estimated that about 30,000 botanical species are now recorded for their medicinal properties.

These botanicals had over the years been subjected to wide and unsustainable use (Kayode 2002). They are now diminishing at an alarming rate. Although studies on the ethnomedicinal utilization of botanicals abound in Nigeria, these studies were conducted on scattered basis usually based on the ethnic composition of the country. Presently, a gross dearth of documentation abounds on the ethnomedicinal utilization of botanicals among the Ekiti, a distinct Yoruba tribe that constitutes over 98% of the 1.6 million inhabitants (EKSG 1997) of Ekiti state. At present sexually transmitted diseases (STD) are perhaps the most devastating diseases in the state. The diseases include Gonorrhoea, Trichomoniasis, Chlamydial infection, Syphilis and, more recently, the Acquired Immune Deficiency

Syndrome (AIDS).

The aim of this study therefore is to identify botanicals used traditionally in the management of sexually transmitted diseases in Ekiti State, and propose sustainable strategies for the conservation of these species.

MATERIALS AND METHODS

The study was conducted in Ekiti State, which is situated in the southwestern part of Nigeria. Ekiti has a land area of about 7000km², and is situated between latitude 7⁰25' and 8⁰20' North and longitude 5⁰00' and 6⁰00' East. The state has a population of about 1.6 million (EKSG 1997), 75% of whom are farmers who live in rural areas. There are two climatic seasons in the state, a dry season from November to February and a rainy season from March to October. The annual rainfall is about 1150mm (Kayode and Faluyi 1994). According to Smith and Montgomery (1962), the soil is overlying metamorphic rocks of basement complex, which shows greater variations in size and mineral composition.

METHODS

A combination of social surveys and direct field observation (Kayode 2002) was used in the study. The entire state was divided into three zones based on the existing political delineation. These zones are Ekiti Central, Ekiti South and Ekiti North. In each zone, three major markets were selected, the major criterion for selection being the level of patronage by residents from both rural and urban centers in the zone. In each of these markets, vendors of medicinal plant species were identified and interviewed with the aid of a semi-structured matrix. The interviews focused on plant species used in curing sexually transmitted diseases.

The botanical species were identified by the vendors; the part(s) of the species used and methods of application during utilization were identified and recorded. Voucher specimens of the species were obtained and taken to the herbarium of the Department of Plant Science, University of Ado-Ekiti, for scientific identification and preservation.

The abundance of the species identified was determined in the study area. For this purpose, five rural communities, which were far from urban influence, were selected in each zone. In each of these communities, the abundance of each of the identified species was determined within 5 kilometers radius from the center of each community using the abundance scale defined by Kayode (1999) as follows: Rare when the number of the individual species found available within the defined area was less than 5; Occasional when between 5 and 10 individuals were found; Frequent when between 11 and 30 individuals were found; Abundant when between 31 and 100 individuals were found; And, very abundant when more than 100 individuals were found. Also in each community, ten elderly respondents were randomly selected and interviewed on their knowledge of the utilization of the identified botanical species.

Also in each zone, five key informants who were knowledgeable in the use of botanical species were identified and interviewed. These included herbalists and community development officers. Secondary information on the active principles present in the

identified species was obtained from the literature, especially Oliver (1960), Gbile (1986) and Gill (1992).

RESULTS AND DISCUSSION

The following 49 plant species belonging to 30 families were identified as being used for curing sexually transmitted diseases in the study area:

Alliaceae

Allium cepa

Local Name: Alubasa

Parts used: Leaves, bulb

Major source: Market

Abundance at source: Very abundant

Active Principle: Riboflavin, n-propyl disulphide

Allium ascalonicum

Local Name: Alubasa

Parts used: Whole plant

Major source: Household farms

Abundance at source: Rare

Active Principle: Riboflavin

Amaranthaceae

Amaranthus spinosus

Local Name: Tete elegun

Parts used: Leaves, stem

Major source: Farms

Abundance at source: Abundant

Active Principle: Tannins, saponin, hydrocyanic acid

Cyathula prostrata

Local Name: Shawere pepe

Parts used: Leaves, stems

Major source: Forest

Abundance at source: Rare

Active Principle: Tannins, saponin

Annonaceae

Haxelobus monopetalus

Local Name: Lapawe

Parts used: Roots, Stems, Leaves

Major source: Forest

Abundance at source: Rare

Active Principle: Saponin, inulin, essential oil

Apocynaceae

Landolphia owariensis

Local Name: Ibo-akitipa

Parts used: Leaves, roots, stem bark, seeds

Major source: Forest
Abundance at source: Rare
Active Principle: Saponin, tannins

Asclepiadaceae

Secamone afzelii

Local Name: Alu
Parts used: Stems, Leaves
Major source: Forest
Abundance at source: Rare
Active Principle: Alkaloids

Bignoniaceae

Kigelia africana

Local Name: Pandoro
Parts used: Leaves, roots, stem bark, fruit
Major source: Forest
Abundance at source: Rare
Active Principle: Saponin, tannins, inulins, B-amyrin (Msonths 1986)

Sterospermum kunthianum

Local Name: Akoko-igbo
Parts used: Leaves, roots, stem bark, fruits
Major source: Forest
Abundance at source: Rare
Active Principle: Tannins, saponin

Burseraceae

Canarium schweifuthii

Local Name: Origbo
Parts used: Stem bark
Major source: Forest
Abundance at source: Rare
Active Principle: Saponin, tannins, resin, amyrrin, limonene phellandrina (Gill 1992).

Cactaceae

Opuntia dillenii

Local Name: Oro
Parts used: Stem, roots
Major source: Forest
Abundance at source: Rare
Active Principle: Tannins, saponin

Caesalpiniaceae

Afzelia africana

Local Name: Apa
Parts used: Root
Major source: Forest
Abundance at source: Rare
Active Principle: Alkaloid, Tannins

Cassia podocarpa

Local Name: Asunrin

Parts used: Leaves

Major source: Forest

Abundance at source: Rare

Active Principle: Anthraquinones

Macrolobium macrophyllum

Local Name: Aba

Parts used: Stem bark

Major source: Forest

Abundance at source: Rare

Active Principle: Tannins, saponin

Mezoneuran benthamianum

Local Name: Ajuju

Parts used: Leaves, stem, roots

Major source: Forest

Abundance at source: Rare

Active Principle: Saponins, mucilage

Caricaceae***Carica papaya***

Local Name: Ibepe

Parts used: Leaves, fruits, roots

Major source: Household farms

Abundance at source: Abundant

Active Principle: Carpaine, saponin, tannins, nicotinic acid, tocopherol, papain

Colchicaceae***Gloriosa superba***

Local Name: Ewe-aje

Parts used: Leaves

Major source: Forest

Abundance at source: Rare

Active Principle: Superbin, colchicin, gloriosine, gloriosol, phytosterils, stigmasterin

Combretaceae***Terminalia catapa***

Local Name: Odan

Parts used: Stem bark

Major source: Forest

Abundance at source: Rare

Active Principle: Tannins

Terminalia glaucescens

Local Name: Odan

Parts used: Stem bark, roots

Major source: Forest

Abundance at source: Rare

Active Principle: Alkaloids, tannins

Connaraceae

Cnestis ferruginea

Local Name: Omu-aje

Parts used: Leaves, roots, fruits, seeds

Major source: Forest

Abundance at source: Rare

Active Principle: Glycosidea

Dilleniaceae

Tetracera alnifolia

Local Name: Opon

Parts used: Leaves, roots

Major source: Forest

Abundance at source: Rare

Active Principle: Glycoside – syringin, tannis

Euphorbiaceae

Alchornea cordifolia

Local Name: Ipa

Parts used: Leaves, stem bark, fruits, roots

Major source: Forest

Abundance at source: Frequent

Active Principle: Inulin, tannins, alchornin, alkaloid

Alchornea laxiflora

Local Name: Pepe

Parts used: Stem

Major source: Forest

Abundance at source: Frequent

Active Principle: Alkaloid

Manihot esculenta

Local Name: Ege

Parts used: Leaves, tubes

Major source: Household farm

Abundance at source: Very abundant

Active Principle: Alkaloid, saponins, tannins

Phyllanthus niruri

Local Name: Asasa

Parts used: Leaves, stem, roots

Major source: Forest

Abundance at source: Rare

Active Principle: Saponins, phyllanthin, hypophlenthin

Lamiaceae

Ocimum basilicum

Local Name: Efinrin-wewe

Parts used: Leaves, stem, roots

Major source: Household farms

Abundance at source: Frequent

Active Principle: Essential oils, methylcinnamate, thymol, terpenes

Malvaceae

Abuilon mauritianum

Local Name: Furu

Parts used: Leaves, roots

Major source: Forest

Abundance at source: Rare

Active Principle: Tannins, saponin

Hibiscus esculentus

Local Name: Ila

Parts used: Fruits, seeds

Major source: Household farms

Abundance at source: Very abundant

Active Principle: Essential oils-farnesol

Sida cordifolia

Local Name: Iseketu pupa

Parts used: Leaves, roots

Major source: Forest

Abundance at source: Abundant

Active Principle: Alkaloid-ephedrine

Meliaceae

Trichilia prieuriana

Local Name: Awe

Parts used: Roots

Major source: Forest

Abundance at source: Rare

Active Principle: Tannins, saponin

Moraceae

Ficus asperifolia

Local Name: Eripin

Parts used: Leaves, stem bark, roots

Major source: Forest

Abundance at source: Occasional

Active Principle: Tannins

Ficus capensis

Local Name: Opoto

Parts used: Roots

Major source: Forest

Abundance at source: Occasional

Active Principle: Tannins

Mimosaceae

Tetrapluera tetreptera

Local Name: Aridan

Parts used: Stem bark

Major source: Forest

Abundance at source: Rare

Active Principle: Saponins-Aridanu, essential oils, scopoletin

Papaveraceae

Argemone mexicana

Local Name: Egunarigbo

Parts used: Roots

Major source: Forest

Abundance at source: Rare

Active Principle: Alkaloids-berberine, protopine

Passifloraceae

Adenia lobata

Local Name: Dodo

Parts used: Leaves, stem

Major source: Forest

Abundance at source: Rare

Active Principle: Flaviroid

Papilionaceae

Desmodium adecendens

Local Name: Epa-ile

Parts used: Leaves

Major source: Forest

Abundance at source: Rare

Active Principle: Tannis

Erythrina senegalensis

Local Name: Ologun-sese

Parts used: Leaves, stem bark, seeds

Major source: Forest

Abundance at source: Rare

Active Principle: Alkaloid – hypaphorine

Polygalaceae

Securidaca longepedunculata

Local Name: Ofodo

Parts used: Leaves

Major source: Forest

Abundance at source: Rare

Active Principle: Saponin-glycosides, tannins, valerianate methylsalicylate

Rutaceae

Citrus aurantifolia

Local Name: Osan-wewe

Parts used: Stem and root barks

Major source: Household farms

Abundance at source: Abundant

Active Principle: Essential oils

Fagara macrocarpa

Local Name: Ata igbo

Parts used: Stem and root barks

Major source: Forest

Abundance at source: Rare

Active Principle: Alkaloids-xanthofegarine, erythrofagarin, fagaramide, f-methoxy-dihydroneitidine

Fagara zanthoxyloides

Local Name: Ata

Parts used: Root and stem barks

Major source: Forest

Abundance at source: Rare

Active Principle: Alkaloi, p-hydroxybenzoic acid, 2-hydroxymethyl benzoic acid, vanillic acid, inulin,
Saponin

Sapindaceae

Bligha sapida

Local Name: Ishin

Parts used: Stem bark

Major source: Household farms

Abundance at source: Abundant

Active Principle: Saponin, hypoglycin, tannins, steroidal alkaloid

Cardiospermum halicacabium

Local Name: Shaworo

Parts used: Roots

Major source: Forest

Abundance at source: Rare

Active Principle: Saponins

Scrophulariaceae

Scoparia dulcis

Local Name: Aya

Parts used: Roots

Major source: Forest

Abundance at source: Rare

Active Principle: Alkaloids, inulin, saponins, tannins

Solanaceae

Capsicum frutescens

Local Name: Ata wewe

Parts used: Fruits

Major source: Household farms

Abundance at source: Very abundant

Active Principle: Capsaicin, oil, ascorbic acid

Solanum nigrum

Local Name: Odu

Parts used: Leaf

Major source: Household farms

Abundance at source: Abundant

Active Principle: Alkaloid-solanine, solamarine, scopolin , scopoletin, aesculin,,

isoscopoletin,

demisine, solarmagine, solasodabiro, tomatine, solauricine, solangustine

Solanum vervasifolium

Local Name: Ikan

Parts used: Leaves, fruits, roots

Major source: Farms

Abundance at source: Abundant

Active Principle: Alkaloid-solanine, saponins

Tiliaceae

Glyphaea brevis

Local Name: Atori

Parts used: Leaves

Major source: Forest

Abundance at source: Occasional

Active Principle: Tannins, saponin

Verbenaceae

Gmelina arborea

Local Name: Melaina

Parts used: Leaves

Major source: Government Reserve Forest

Abundance at source: Very abundant

Active Principle: Tannins

Most of these species were rare in abundance and the proportion of the cultivated species was relatively low. Species cultivated were meant for other purposes other than their medicinal value. The methods of extraction were mostly predatory and annihilative. Such methods, as previously observed by Homman (1994), Kayode and Ogunleye (2008), entailed the destruction of source(s) in such a rate that the regeneration is slower than the rate of extraction. Thus, predatory and annihilation usually results in increasing scarcity of species. Although some of the species were extracted by non-predatory and gathering methods, yet collections were observed to be by pulling or cutting of the branches thus making such collection destructive. Field observations revealed that collections were done indiscriminately without any consideration for size and age, thus resulting in species depletion. Also, the lower-altitude harvesting by a larger number of households in the study area due to the less vegetation cover per inhabitants may be detrimental to the survival of these species.

Considerable proportions of the identified botanicals were obtained from the forest. Thus the increasing conversion of valuable natural environments in the study area to monoculture plantations of exotic timber and agriculture will likely lead to a continued erosion of botanical diversity in the study area. Thus, some of the presently rare species require urgent domestication while in-situ and ex-situ conservation methods should be embarked upon. These, according to Shinwari and Khan (2000) will require the protection of plant species in their natural habitats followed by ex-situ devices by growing the rare

species and subsequently re-introducing them into their natural environment. The domestication of most of the botanicals identified is now desirable, further research activities are still required to develop deep understanding of the life cycles, pollination, and dispersal mechanisms in most of the botanicals. The populace should be enlightened on the dangers in the loss of biological diversity. Kayode (2006) had also advocated the need to accommodate the indigenous farmers in both planning and execution of conservation activities. This strategy is still relevant in the study area.

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