Ethnobotanical Leaflets 12: 44-55, 2008.

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

J. Kayode[1,3] and G.M. Kayode[2]

[1]Department of Plant Science, University of Ado-Ekiti, Ado-Ekiti, Nigeria.
[2]Department of Adult Education, University of Ado-Ekiti, Ado-Ekiti, Nigeria.
[3]Author to whom correspondence should be addressed. E-mail: josmodkay@yahoo.com

Issued 29 January 2008

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 Gonorrhea, 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 7000km^2, and is situated between latitude $7^0$25' and $8^0$20' North and longitude $5^0$00' and $6^0$00' 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-prophyl 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, amyrin, 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, hypophllenthin

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, terpenses

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-methoyy-dihydronitidine

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 fruitescens
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 vervascifolium
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.

REFERENCES

EKSG 1997. First Anniversary Celebration of Ekiti State. Government Press, Ado-Ekiti, Nigeria. 22pp.

Gbile, Z. O. 1986. Ethnobotany, taxonomy and conservation of medicinal plants. Pp. 13-29. In: Sofowora, A. (Ed.). The state of medicinal plants research in Nigeria. University of IbadanPress, Ibadan, Nigeria.

Gill, L. S. 1992. Ethnomedicinal uses of plans in Nigeria. Uniben Press, Benin-City, Nigeria. 276pp.

Homman, A. K. O. 1994. Plant extrativism in the Amazon: Limitations and possibilities. In: Extractivism on Regional Development. Ctusener-God, M. and Sachs, I. (Eds.). MAB Digest 18, UNESCO, Paris. pp. 34-57.

Kayode, J and Faluyi, M. A 1994. Studies on self and cross compatibility studies on soybeans (*Glycine max*) in a tropical environment. Nigerian Journal of Botany 7:55- 61.

Kayode, J**.** (2006). Conservation of indigenous medicinal botanicals in Ekiti State, Nigeria. Journal of Zhejiang University SCIENCE-B 7 (9): 713 -718.

Kayode, J. and Ogunleye, T. (2008). Checklist and Status of Plant Species Used as Spices in Kaduna State of Nigeria. Research Journal of Botany 3 (1), 35-40

Oliver, B. (1960). Medicinal plants in Nigeria. University of Ibadan Press, Ibadan, Nigeria. 139pp.

Shinwari, M. I. and Khan, M. A. 2000. Folk use of medicinal herbs of Magalla Hills National Park, Islamabad. Journal of Ethnopharmacology*,* 69: 45-56.

Smith, A. J. and Montgomerry R.T. 1962. *Soil and land use in central western Nigeria.* The Government Press, Ibadan, Nigeria.