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Medicinal and Socio-Cultural Importance of *Costus Afer* (Ker Grawl) in Nigeria *(Pp. 282-287)*

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Abstract

Medicinal plants play a great role in human life and have substances that are used for traditional therapeutic and modern drug production purposes in primary health care delivery. Costus afer as a medicinal plant is commonly used for traditional therapeutic and other socio cultural purposes such as wrapping of indigenous food items, mat making, feed to small ruminants, treatment of cough, measles, malaria, eye defects, hunch back and evil repellants. The major constituents of C. afer for modern drug production are steroidal saponins, saponins aferosides A-C and dioscin.

Introduction

In Nigeria traditional medicine has become a part of the people's culture. The ministry of Health in many African countries including Nigeria now has a department or agency that oversees the affairs of traditional health care delivery system. In addition, formalized training of traditional health care attendants has started in many African countries.

The regional committee for Africa of the world health organization (WHO 2002) reported that 34% of member states have legal framework for traditional medicine as at 1990. The report stated that only 34% had a management body for traditional research activities; 52% have technical

research institutions working in the area of traditional medicine; 52% have a budget allocated for traditional medicine; 45% have a directory of traditional medicine practitioners; 50% make official use of the traditional medicine practitioners; 20% have initiated training programmes for traditional medicine and only 5% have a journal dealing directly with traditional medicine. WHO also stated that efforts should be complimented with adequate research in quality, efficacy and safety of medicinal plants such as *C. afer*.

C. afer, which is commonly called bush sugar cane or monkey sugar cane (Nyananyo, 2006), is a useful medicinal plant that can be endangered in Nigeria and River State in particular. First and foremost, as a result of deforestation, many medicinal forest resources such as *C. afer* are gradually being eroded. There is need for relevant information about the species, especially its medicinal values.

Secondly, the value of biological diversity, reside not only in the direct use of the species but also in indirect uses such as socio-cultural benefits (e.g. religious and cultural functions). This paper discusses on known aspect of *C. afer* as a medicinal plant as well as its socio-cultural benefits to man in some part of Nigeria.

Botanical Description of *C. afer*

C. afer which belongs to the family *Zingiberaceae* is a monocot and a relatively tall, herbaceous, unbranched tropical plant with creeping rhizome. It is commonly found in moist or shady forest of West and Tropical Africa (Iwu 1983).

C. afer is a perennial, rhizomatous herb that can attain a height up to 4m. Leaves are arranged spirally, simple and entire. Sheath is tubular, closed, green with purple blotches; ligule 4-8mm long, leathery and glabrous; petiole is 4-12mm long; blade is elliptical to obovate, 15-35cm x 3.5-9.5cm, base is rounded to subcordate, apex is acuminate, margin is sparsely hairy, usually glabrous above, sometimes shortly hairy beneath. Inflorescence is a very compact, terminal, conical spike 2.5-7.5cm long, sessile; bracts is oblong, convex, 3.5cm long, densely intricate, upper ones often smaller, apex is truncate to rounded, green with purple markings, each subtending 2 flowers; bracteoles is boat-shaped, 2.5cm x 1cm, keel is thick and ridged, pale green with pink markings and thin pink papery margin. Flowers are bisexual and zygomorphic.

Geographical distribution

In Africa, *C. afer* is found in the forest belt from Senegal to Ethiopia and in the East to Tanzania, Malawi and Angola, in the South and in West Africa. It is common plant in Nigeria, Ghana, Togo, and Cameroun. It is often planted in home garden for medicinal purposes. *C. afer* is pantropical and comprises of about 70 species, which about 40 species are found in tropical America, about 25 in tropical Africa and about 5 in South-East Asia (Aweke, 2007).

Cultivation

C. afer could be propagated easily by vegetative means, involving the use of offsets at the base of mother plants. Mature plant of about 2m could be cut into 30cm pieces with 3-4 nodes. In addition, its horizontal rhizomes could be used as root cuttings for large scale production of the species in the nursery

Traditional Therapeutic Uses

About 70-80% of the world population depends on traditional healthcare based on medicinal plants. Indigenous people of Africa employ at least 20,000 plant species for medicines and related purposes (Melchias 2001). Some medicinal plants used in Nigeria are as efficient as modern medicine. In addition to medicinal properties many of the plants are high in protein, vitamins, mineral and carbohydrate for both human and livestock.

Many scientists have reported on ethno-botanical and ethno-pharmacological characteristics of medicinal plants. Their findings revealed different properties of these medicinal plants. Such properties include: antihelminthic and antimicrobial characteristics. Most of the findings were primary and secondary data gathered from traditional herbal practitioners and herbal dealers. Some of the examples are *Amaranthus* species, *Anacardium occidentale*, *Mangifera indica*, *Spondias mombin*, *Monodora myristica*, *Xylopiya aethiopica*, *Alstonia congensis*, *Funtumia* species, *Rauvolfia vomitoria*, *Caladium bicolor*, *Gongronema latifolium*, *Avicennia africana*, *Balanite aegyptiaca*, *Kigelia africana*, *Newbouldia laevis*, *Carica papaya*, *Myrianthus arboreus*, *Combretus species*, *Terminalia species*, *Garcinia kola*, *Azadirachta indica* among others (Makanjuola 2008; Ogunlesi et al 2008; Coker and Ayoola 2008; Ayoola 2008; Olowokudyo 2008; Soladoye and Oyesika 2008; Oyewale 2008; Nneoma and Niemogha 2008)

C. afer is a useful medicinal plant that is highly valued for its ant-idiabetic, anti-inflammatory and anti-anthritic properties in South-East and South-West Nigeria (Soladoye and Oyesika, 2008).

In Ogba community of Rivers State, the leaf and stem of *C. afer* when cut and crushed into smaller bits, boiled together with the leaf and bark of *Alchornea cordiflora* is used for the treatment of hunch bark and malaria.

Among the Ikwerre ethnic group in Rivers State, it is applied in various ways. The leaves are reputed to be an effective remedy for fever and malaria when boiled with leave of *carica papaya* (pawpaw), citrus species (orange) and bark of *Mangifera indica* (mango). The stem and juice has traditional use for treatment of cough, measles and malaria in Aluu community of Rivers State.

The juice of *C. afer* is extracted and used as an instillation for eye inflammation and defects in Ogoni land, Rivers State. The young and tender leaves when chewed is believed to give strength to the weak and dehydrating patient. An infusion of the inflorescence is taken to treat stomach complaints.

A stem decoction (the mashed or chewed stem or the pounded fruit) mixed with sugarcane juices are taken to treat cough, respiratory problem and sore throat. The smoke of dried stem is also inhaled to treat cough in Akenfa community of Bayelsa state.

In Ogoniland of Rivers State, the leaf sap is used as eye drops to treat eye troubles and as nose drops to treat headache and malaria. In Akenfa community of Bayelsa State, stem sap is applied to treat urethral discharges, venereal diseases, jaundice and to prevent miscarriage. A stem decoction is widely used to treat rheumatoid arthritis in parts of the Niger Delta.

An infusion of the dried aerial parts is use to treat hypertension in Ogbolom a community in Bayelsa state.

The stem is used as an enema to worms and hemorrhoids. The pulped stems taken in water are strongly diuretic. A cold water extract of the stem is used to treat small epileptic attacks. Rhizome pulp is applied to teeth to cure toothache. The rhizome decoction is taken to treat leprosy and venereal diseases in Ogboloma, Bayelsa State. In Aluu community of Rivers State the leaf and stem of *C. afer* is used to treat gonorrhia, reduction of fat and a source of water for grass cutter (*Thynomys swinderianus*) during the dry season.

There are cultural differences in the way medicinal plants are used (Hamilton, 2003). The leaves of *C. afer* is used in Nigeria (Edo state) as wrapper for some indigenous food items. The leaves are also used for wrapping indigenous food item called kpagbodo in Opuama town, Bayelsa state. It is also believed among the people of Aluu in River State that *C. afer* when used as fence around building scares away evil doers around the vicinity.

In Ahouda community of Rivers State *C. afer* is believed to have supernatural power, when used as cane to flog or whip a witch or wizard. It is believed to automatically redeem and remove evil spirit from the body of the individual possessed.

Chemical constituents

Diosgenin is a very important raw material found in *C. afer* used as a precursor in the synthesis of a number of steroid drugs including corticosteroids, sex hormones, oral contraceptive and anabolic agents. The rhizome also contains the saponins aferosides A-C, as well as diosgenin and parphyllin c and flavonoid glycoside kaempterol 3-O-L-rhamnopyranoside. (Aweke, 2007).

Conclusion

C. afer may help to provide the basic health-care services to the greater part of the rural poor population in many parts of Africa. In order to prevent overexploitation that could lead to extinction, effort should be made to conserve the species. *C. afer* is certainly underexploited as at today. Its numerous uses as medicinal plant and socio-cultural values justify more intensive research into its biological, economic and cultural potentials.

Reference

- Aweke, G, (2007). *Costus afer* (Ker Grawl) In: Schmelzer, G.H. and Guribraukin, A. (Eds). *Plant Resources of Tropical Africa (PROTA)* Wageningen, Netherlands.
- Ayiola A. (2008). *A Textbook of Medicinal Plants From Nigeria*. University of Lagos Press. 628 pp.
- Coker A.A.B and A. Ayiola (2008). *A Textbook of Medicinal Plants From Nigeria*. University of Lagos Press. 628 pp.
- Hamilton, A. (2003). *A Textbook of Medicinal Plants From Nigeria* University of Lagos Press. 628 pp.
- Iwu, M. M (2009). Traditional Igbo Medicine. *Applied Sciences 3(4)*: 21-25 Institute of Africa Studies Publication, University of Nigeria, Nsukka,
- Makanjuola W.A. (2008). *A Textbook of Medicinal Plants From Nigeria* University of Lagos Press. 628 pp.
- Melchias, G. (2001). "Biodiversity and Conservation. Enfield". In: Emmanuel K. Boon and Luc Hens, (Eds.) *Indigenous Knowledge Systems and Sustainable Development; Relevance for Africa* Kamla-Raj Enterprises 2007 tribes and Trials, Special Volume N o.1:121-139 Science Publishers, Inc.
- Nyananyo, B.L. (2006). Plants From The Niger Delta. *International Journal of Pure and Applied Sciences 3(4)*:21-25pp.
- Ogunlesi, M.J Okiei, W. and Ademoye, M. (2008) *A Textbook of Medicinal Plants From Nigeria*. University of Lagos Press. 628 pp.
- Olowokudejo J.D (2008). *A Textbook of Medicinal Plants From Nigeria* University of Lagos Press. 628 pp.
- Soladoye, M.O and O.O. Oyesika (2008) *A Textbook of Medicinal Plants From Nigeria*. University of Lagos Press. 628 pp.
- WHO (2002) Traditional Medicine. WHO Document No. WPR/RC52/7 Brunei Darussalam.