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Ethno-medico-botanical Uses of *Securidaca longepedunculata* Fresen (Family-Polygalaceae) from Keffi Local Government, Nasarawa State, Nigeria

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Abstract

Aim: Present study reports ethno-medicinal uses of *Securidaca longepedunculata* as collected from Keffi, Nasarawa State, Nigeria.

Materials and Methods: Information was obtained by interviewing folk medical practitioners in the surveyed area.

Results and Discussion: A total of twenty results and their ethno- medicinal uses of the different plant parts to treat diseases are documented.

Keywords: Ethno-medicine, *S. longepedunculata,* Folk Medical Practitioner, Keffi, Nasarawa State, Nigeria.

1. Introduction

Ethno-medico-botany is the study of how people of a particular beliefs, philosophy and area utilised native plants for medicinal purpose. Ethno-medico-botanists discover how plants are used for such things as sartorial, religious ceremonies, food, shelter, hunting and medicine. Ethno-medico-botany has its origin in medicine and botany, the scientific study of plants. Botany, in turn, began to some extent from curiosity in the discovery of plants to aid fight diseases. However, medicine and botany have always exhibit close relations. A lot of contemporary medicines have been originated from plant sources. The ethno-medico-botany as a field is on the rise as a main area of research among plant science. Research in plant sources continued and plants are still used as the basis for many drug development.

Securidaca longepedunculata (Common name; Hausan name: 'Sányáá/Úúwár máágúngúnà'; Fulani name: 'aalali') is a medium size tree to 8–9 m height with visible violet (or white) flowers, pale smooth bark, common in North-Central Nigeria, and is generally widespread in hot temperate part of Africa. When in flower the plant is distinctly ornamental. The fruits are round, with a characteristic membranous wing up to 45 mm, purplish green when young, becoming pale straw coloured between April and August. The flower is very attractive to birds, butterflies and other insects.

S. longepedunculata- Family Polygalaceae is known to have some very important medicinal and ethno-medicinal use (16, 2, 3, 17, 12, 14, 1).

Documentation of ethno-medico-botanical uses of plant species will help preserve the importance of

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indigenous knowledge, and may also lead to the isolation of new chemical compounds that can be developed into novel drugs. Therefore, this paper is an opening and unpretentious attempt to list the ethno-medico-botanical uses of *S. longepedunculata (Sányáá)* from Keffi local government area of Nasarawa state, Nigeria.

2. Materials and Methods

Information was obtained through interviews with 11 folk medical practitioners in the study area, and through participation in the collection, formulation and administration of the botanical drug in the treatment. Comprehensive report was acquired on identity of the plant, method given for a particular illness or ailment and during the period of administration. The term "repast", except stated otherwise, imply to lunch and dinner. Enquiry from the patients within the study area on the efficacy of the plant to treat various diseases mentioned was made but was not possible at all cases as most patients are Muslim women which finds it difficult to answer or talk to the researcher as it is prohibited in their religion to talk to male counterparts that are not their husbands. A set of voucher herbarium specimen of the plant was deposited at the Herbarium Unit of Plant Science and Biotechnology of Department of Biological Science, Nasarawa State University, Keffi, Nigeria.

3. Results

A list of the uses of *S. longepedunculata* (arranged in alphabetical order) is presented below. For each of the use, the following information is given: plant part used formula, mode of preparation and administration.

Abortion: Dried root boiled into distilled water along with Lállè (Hausa name)/nalli (Fulani name) (leave of *Lawsonia inermis)* and a pap is made from the juice.

Constipation: Dried root socked into distilled water along with Lèèmóó (Hausa name)/lemuu-re (Fulani name) (*Citrus aurantifolia*- the Juice*)* for three days.

Cough: Dried root ground into powdered form taken orally with cow's milk (or) pap after repast for seven days.

Diarrhea: Dried bark and root boiled with distilled water is taking orally after repast for three days.

Dislocated jaw: Fresh leaves boiled into distilled water, the juice is used as a mouth wash thrice a day for seven days.

Dysentery: Dried bark ground into powdered form taken orally with cow's milk (or) pap after repast for fourteen days.

Fever: Dried root boiled into distilled water along with Mákárín fako (Hausa name)/labunehe (Fulani name) (bark of *Brachiaria jubata*) and taking orally after repast for three days.

Frequent stomach ache: Dried bark boiled into distilled water along with Mádàácíí (Hausa name)/ɗaalee-hi (Fulani name) (bark of *Khaya senegalensis)* with potash and taking orally after repast for twenty one days.

Headache: Dry leave is grounded and put into fire. The smoke is then inhaled trice a day for three days.

Vagina itches: Dried root boiled into distilled water and taking orally after repast for twenty eight days.

Malaria: Dried bark boiled into distilled water (decoction) along with Fàárúú (Hausa name)/faruhi (Fulani name) (bark of *Lannea microcarpa)* is taking orally after repast for three days.

Piles: Dried bark boiled into distilled water along with the following plants: Ɗóòráwà (Hausa name)/ naree-hi (Fulani name) (bark of *Parkia biglobosa)*, Káɗányà (Hausa name)/karee-hi (Fulani name) (bark of *Vitellaria paradoxa)* and Màngwàrò (Hausa name)/mangoroo-hi (Fulani name) (bark of *Mangifera indica)* is taking orally after repast for fourteen days.

Pneumonia: Dried root boiled into distilled water along with Gwándàn dàájìì (H)/dukuu-hi/-je ladde (F) (root of *Annona senegalensis)* with red potash for twenty one days.

Protection against evil spirit and witchcraft: Dried leave ground into powdered form along with Báushè (Hausa name)/ɓood-I (Fulani name) (bark of *Terminalia reticulate)* with pap.

Sexual boost: Dried root ground into powdered form along with Dóòráwà (Hausa name)/naree-hi (Fulani name) (root of *Parkia biglobosa)* with cow's milk.

Skin cancer: Fresh leaves made into a paste with little or no water along with Gáuɗè (Hausa name)/diingaa-li (Fulani name) (bark of *Gardenia erubescens)*. Little of it is sucked in water and taken while the rest is applied externally twice a day for sixty three days.

Skin infections: Fresh leaves made into a paste with little or no water along with Shàà shàà táu (Hausa name)

(leave of *Jussiaea suffruticosa)* and shea butter, the paste is externally applied twice a day.

Toothache: Dried root boiled into distilled water along with Dóógón yáàròò (Hausa name)/ganyi (Fulani name) (stem of *Azadirachta indica)*. The juice is used as a mouth wash twice a day for seven days.

Tuberculosis: Dried root ground into powdered form along with Márkéé (Hausa name)/kojo-li (Fulani name) (bark of *Anogeissus leiocarpus)* taken with cow's milk (or) pap for seventy one days.

Typhoid: Dried bark boiled into distilled water (decoction) along with Gwàndàr kùnnèè (Hausa name) (bark of *Trianthema pentandra*) is taking orally after repast for twenty eight days.

4. Statistical Analysis

The data were checked for consistency, spreads on Excel sheet to summarise and identify various proportions like frequency of citation of a uses (Table 1) in the study area. Frequency of citation was calculated by following formula-

$$\text{Frequency of citation}(\%) = \frac{\text{Number of folk healers who cited the uses} \times 100}{\text{Total number of folk healers interviewed}}$$

Table 1: Uses and the frequency of citation by folk healers

Uses	Frequency of citation (%)
Abortion	18
Constipation	45
Cough	82
Diarrhea	36
Dislocated jaw	9
Dysentery	36
Fever	73
Frequent stomach ache	91
Headache	64
Vaginal itches	27
Malaria	82
Piles	55
Pneumonia	55
Protection against evil spirit and witchcraft	73
Sexual boost	45
Skin cancer	73
Skin infection	55
Toothache	45
Tuberculosis	91
Typhoid	55

5. Discussion and Conclusion

There is a powerful mutual connection linking the systematic study of the relationships between plants and people and the system of minimizing the loss of genetic diversity, loss of species diversity and stresses on habitat/ecosystem [5].

The use of medicinal plants and phyto-therapy is a phenomenon of primary importance in the medical practices of Keffi local government, Nasarawa state. This study is the first study ever conducted on the medical ethno-botanical uses of *S. longepedunculata* of Keffi local government, Nasarawa state, where most diseases are treated with phyto- therapy. In most cases the people uses native plants along with some naturalized and cultivated species.

This consultation records twenty novel assertions of the use of *S. longepedunculata* in conventional herbal treatment. Different plant parts are used in the treatment of different diseases.

The survey results show that traditional healers manage several conditions using this single plant species. This is not astonishing given that a single plant species can contain several chemical compounds that can curtail several infections. On the other hand, different folk healers used this plant to treat several infections and sickness. Hence, native knowledge of medicinal use of plants is dynamic and varies in line with healers and medical condition.

My study revealed that nine reports made use of root (47.6%); six reports were based on bark (28.6%) while five reports prescribed the use of leaves (23.8%) (Figure 1). Six formulas exploit the *S. longepedunculata* plant without any secondary ingredient. Remaining fourteen formulas use variety of folk plants as secondary ingredients.

Khan and Khan [11] claimed that there is always logic behind the use of some secondary ingredients while some minerals used may either modify the effect of primary drug or may give rise to wholly new more potent bioactive compounds [18].

The bio- active compound found in this plant families contain active secondary metabolites that work against many infections. For instance, preceding studies reported that the family Polygalaceae was rich in alkaloids, cardiac glycosides, flavonoids, Saponins and Tannins that help treat epilepsy [13], anti-snake venom and as purgative [4].

S. longepedunculata is reported to possess the following chemical constituents—1-methyl 2-hydroxy-benzoate; methyl salicylate; methyl 3-hydroxybenzoate; methyl 4-hydroxybenzoate; methyl 2-hydroxy-6-methoxybenzoate; benzyl 2-hydroxy-6-methoxybenzoate [9]. Methanolic root extract has been shown to possess anti-malarial properties [8].

This study showed the use of *S. longepedunculata* in inducing abortion with other plant. In Burkina Faso, Karl Lorenz Dehane also reported the uses of leave and root of *S. longepedunculata* to induce abortion.

Tuberculosis, constipation and headache are treated by *S. longepedunculata* in this study. Most of these diseases have also been reported in other studies [15, 19].

This study reports the use of *S. longepedunculata* in the treatment of toothache, cough, fever and pneumonia which correspond to the work of Galeffi and co-workers [7]. Tshisikhawe and colleagues [20] reported the use of the plant root by Vhavenda people as a sexual boost.

Delziel [6] reported the use of *S. longepedunculata* in the treatment of stomach pain which also correspond to my study.

Recently, the root of *S. longepedunculata* was reportedly used to treat people who are believed to be possessed by evil spirit [8]. This finding conforms to the present study.

In Belgique, Delaude [21] reported the uses of *S. longepedunculata* for the treatment of diarrhea. This report is similar to the present study.

Some medico-botanical reports documented in this paper which is used for the treatments of vagina itches, dysentery, dislocated jaw, typhoid, piles, skin cancer and skin infections are reported for the first time in this specie. However, during the period of my survey, folk healers claim the usefulness of this plant to treat more than hundred diseases. There is need for ethno-botanists around the world to continue in finding its ethno-medicinal uses.

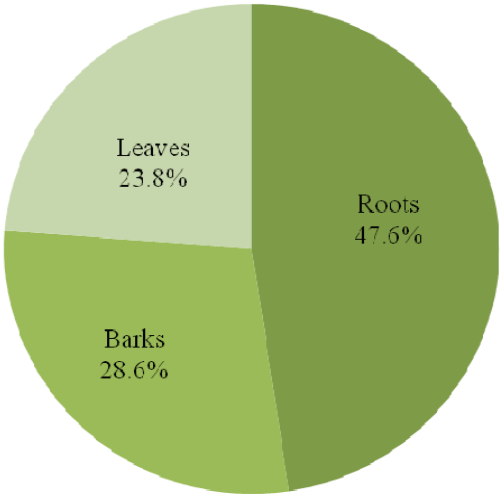

Fig. 1. Percentage of the plant parts used.

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