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# A Review of Medicinal and Pharmaceutical Properties of Some Selected Nigerian Plants

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**ABSTRACT**

This paper reviewed the medicinal and pharmaceutical properties of some selected Nigerian medicinal plants. The seed of Garcina cola used as antipoison and treatment of breast cancer, and Prospermum corymbiferun plant concoction used for treating all dermal infections have been reported to contain tannins, saponins, glucosides, flavonoids, steroids, alkaloids and resins which show the pharmacological properties of the plants. The leaves of Helianthus annus used for the treatment of wounds because of its blood clothing property has been shown to contain quinines which are components of vitamin K in addition to alkaloids, flavonoids, glycosides and proteins. Extracts of Sanservieria trifasciata used for treating convulsions, fevers and respiratory disorders, and Crinum jagus bulbs extract used for treating malaria, sores and chronic cough have been reported to contain some active principles that inhibit the growth of different types of bacteria. Vernonia amydalina used for the treatment of skin infections, diabetes, prostrate cancer and a host of other diseases has been reported to possess vernodalin, venomygdin and sapon which serve as inhibitors to microbial growth. Generally the inhibition action of the active principles possessed by these plants on micro organisms is ascribed to the mechanism which impairs variety of enzyme systems including those involved in energy production and interfere with the integrity of the cell membrance and structural component synthesis.

**Key words:** Medicinal Plants, Diseases, Pharmaceutical Properties, Active Principles, Antimicrobial Activities.

## INTRODUCTION

Use of medicinal plants in human disease management and treatment and their biological and pharmacological properties has been of great interest to many scientists and researchers alike.

Plants have long served man as a source of food, shelter and as medicinal agents. Resonating about the popular phrase, "health is wealth", plant components, particularly leaves, seeds, roots, and barks, stand out as reservoir of this wealth [1]. These plants exhibit a wide range of biological and pharmacological activities such as anti-inflammation, diuretic, laxative, anti-hypertensive and anti-microbial functions [2].

Many of our people depend on the herbal medicine for their drug needs, probably because of the prevailing economic situation faced by people in developing nations, coupled with the fact that most of the population reside in rural areas. Despite the seemingly progress made in development of drugs and antimicrobial agents, occurrence of drug-resistant microbes and emergence of unknown disease-causing microbes pose an enormous public health concern [3]. This fact has forced scientists to search for new antibiotic/antimicrobial compounds from various sources such as medicinal plants, to replace those that have become inactive.

Even when the folkloric uses of medicinal plants for treatment of diseases is an age-long

practice in traditional medicine, plant extracts were administered with no prejudice to their phytochemical, cytotoxic, pharmacological, toxicological properties or inherent active principles, by traditional medical practitioners [4].

The aim of this paper is to identify some Nigerian medicinal plants and present a review on their studies, highlighting the diseases which they are used for treatment and their biological, pharmacological, phytochemical, cytotoxic or toxicological properties, as well as other inherent active principles, which are responsible for the treatment of the diseases.

## EXPERIMENTAL

This paper made use of literature and various studies reported in related areas such as phytochemical screening and antimicrobial investigations of different plants extracts.

## DISCUSSION

### Medicinal and Pharmaceutical Properties

#### *Garcina cola*

The seed of *Garcina cola* (bitter cola) is used as an anti poison, for treatment of breast cancer when ground and mixed with honey, and for the treatment of measles and mumps in children traditionally. It has also been reported for the treatment of urinary tract infections, hemorrhage, wound and sore throat, and the root and bark of the plant are used for treatment of stomach pains, rib pains, liver diseases and is also used as a sexual stimulant [5]. It is also reported that the bark from the plant is used for the treatment of malignant tumors [6]. Investigation on its antibacterial activity revealed that the seed of the plant contains tannins, saponins, glycosides, flavonoids, steroids, alkaloids and resins and that the presence of these components shows the pharmacological property of the seed. [7]

#### *Helianthus annus*

Traditionally the aqueous extract of the leaves of *Helianthus annus* (Sunflower) is used for treatment of soft tissue wounds, burns and infections [8]. It has blood clotting property. This was investigated and the presence of quinines which are component of vitamin K, a strong facilitator of blood clotting, in addition to alkaloids, flavonoids, glycosides and proteins was reported [9].

#### *Prorospermum corymbiferum*

The leaves, stem, bark and roots of *Prorospermum corymbiferum* have been reported to be a source of many compounds like terperoids, anthraquinones, visimiones, flavonoids, alkyl and phenyl compounds with therapecutic effects [10]. The roots and bark decoction is used internally and externally to treat dermal infections such as leprosy, syphilis, eczema, scabies and herpes [11]. Presence of terpenoids, alkaloids, flavonoids, tannins, resins, sterol, carbohydrates and glycosides which are responsible for its antimicrobial properties was reported [12].

#### *Sansevieria trifasciata*

In the phytochemical screening of the leaves of *Sansevieria trifasciata* it was observed that crude extacts from the leaves of the plant contain alkaloids, tannins, phlobatanins saponins and flavonoids and this extract inhibited the growth of staphylococcus albus, streptococcus faecalis, streptococcus pneumoniae and klebsiella pneumoniae [13]. The leaves of the plant are used in the treatment of convulsions, feverish headaches, pains, respiratory disorders and as an anti-bacterial agent [14].

#### *Detarium microcarpum*

In Nigeria, the bark and leaves of *Detarium microcarpum* known among the Hausas and Fulanis as “Taura” and “Konkehi” respectively [15] are used for wound-dressing and treatment of dysentery, [15]. The powdered bark of the plant is haemostatic and is used to heal deep cuts. The smoke from the burnt seeds repel mosquitoes and a fragrant gum-resin obtained from the bark is sometimes used to fumigate garments and huts [14,16]. Studies showed that the carbohydrate (sugar), tannin, glycosides, saponins, sterols, flavonids, alkaloids and resins present in the extracts of the root and bark of this plant show curative activity against several pathogens [17]. Therefore it is not surprising that the plant extract is used traditionally to cure a cascade of illnesses.

#### *Crinum jagus*

*Crinum jagus*, a bulbous herb reported to

grow in sandy areas by the seashore or along river banks [18], has been reported to have anti malarial activity [19]. The plant is used in Southern Nigeria for treatment of memory loss and other mental symptoms associated with ageing. The laboratory test revealed that the bulb extract showed inhibition of acetyl cholinesterase. The leaves and bulbs of the plant are used for treatment of sores, chronic cough, and broken bones [20].

***Sclerocarya (Anacardiaceae)***

Extracts of different species of *Sclerocarya* (*Anacardiaceae*) have been reported to have various ethnomedical uses [21-23]. Studies suggested a potential importance for the use of the stem bark of the plant in the treatment of urinary tract infections particularly in those caused by Neisseria gonorrhoae, Staphylococcus aureus and Psedomonas aeruginosa. [24]

**Lepidagathis alopecuroides (Vahl)**

*Lepidagathis alopecuroides* (Vahl) plant is used to immobilize and kill mudskippers and periopthalmus papillio. The piscidal effects of the plant have been scientifically assessed [25]. The plant is also used as a remedy for stomach disorders. The aerial parts of the plant had been reported to have bacteriostatic and bactericidal effects on Pseudomonas aeruginosa, Staphyloccus accrues, micrococcus luteus, Escherichia coli and Shigella dysenteriae[24].

**Vernonia amydalina**

Beater leaf extracts are used for the treatment of skin infection, diabetes, prostrate cancer, stroke, pneumonia, insomnia, arthritis and a host of other diseases. The potency of this plant was ascribed to the fact that it contains vernodalin, venomygdin and sapon which serve as inhibitors to microbial growth. [26]

## CONCLUSION

This study has clearly revealed that the medicinal plants are endowed with active principles which inhibit microbial activities. The mechanism of the inhibitory actions on micro organisms is probably due to the impairment of variety of enzyme systems including those involved in energy production, and interference with the integrity of the cell membrane and structural component synthesis.

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