

### 1.1.1 *Phyllanthus*

This is a genus of the family *Euphorbiaceae*. It was first identified in Central and Southern India in 18<sup>th</sup> century. It is called carry me seed, stone-breaker, wind breaker, gulf leaf flower or gala of wind, (Bharatiya 1992).

There are over 300 genera with over 5,000 species in the *Euphorbiaceae* world wide. The *Phyllanthus* is one of the genus that falls under this enormous family. *Phyllanthus* has about 750-800 species, found in tropical and subtropical regions. Green medicine is safe and more dependable than the costly synthetic drugs, many of which have adverse side effects (Joseph and Raj, 2010). The use of medicinal plants by man for the treatment of diseases has been in practice for a very long time. Screening of compounds obtained from plants for their pharmacological activity has resulted in the isolation of innumerable therapeutic agents.

Over 50% of all modern chemical drugs are of natural plant product origin and is essential in drug development programs of the pharmaceutical industry (Burton et. al 1983).

### 1.1.2 *Phyllanthus amarus* (*P. amarus*)

*P. amarus* is an erect annual herb of not more than one and half feet tall and has small leaves and yellow flowers. It is a broad medicinal plant that has received world-wide recognition (Srividya and Perival, 1995).

In herbal medicine, *P. amarus* has reportedly been used to treat jaundice, diabetes, otitis, diarrhea, swelling, skin ulcer, gastrointestinal disturbances and blocks DNA polymerase in the case of hepatitis B virus during reproduction, (Oluwafemi, and Debiri, 2008).

In Nigeria, it is called "Oyomokeisoamankedem" in Efik, "Iyin Olobe" in Yoruba and "Ebebenizo" in Bini (Etta, 2008). In traditional medicine, it is used for its hepatoprotective, anti-diabetic, antihypertensive, analgesic, anti-inflammatory and anti- microbial properties (Adeneye et al; 2006). The plant is also used in the treatment of stomach disorders, skin diseases and cold (Kokwaro, 1976; Iwu, 1993). It has anti-diarrhoea effect (Odetola and Ajojenu, 2000). Its anti-viral activity against hepatitis B virus has been established (Thyagarajan et al; 1988, Wang et al; 1995), anti- carcinogenic (Joy and Kuttan, 1998), anti mutagenic activities (Joy and Kuttan, 1998), antiplasmodial (Soh et al. 2009).

Plants contain numerous constituents, some tend to possess some level of toxicity. Cases of this toxicity in plants have been reported (Santox et al; 1995, Shaw et al; 1997, Kaplowitz, 1997). *P. amarus* has been classified among plants with a low potential for toxicity, with an LD50 averaging 2000mg/kg 1day (Krithika and Verma, 2009).

### 1.1.3 *Phyllanthus niruri* (*P. niruri*)

*P. niruri* is commonly called stone breaker, also known as "Chanca piedra". It belongs to the family *Euphorbiaceae*. *P. niruri* is similar to *P. amarus*. It is a wide spread tropical plant commonly found in coastal areas that grows 40-70cm tall (Chukwuma, 2012).

In Nigeria, it is called enyikwonwa and ngwu in Ibo, Oyokeso amanke edem in Efik, geeron-tsemtsaayee in Hausa, ehin olobe and yin-olobe in Yoruba (Chukwuma, 2012).

Although *P. niruri* is considered a problematic weed to farmers it is a valuable medicinal plant. (Oudhia and Tripathi, 2002), and holds a reputed position in both Ayurvedic and Unani system of medicine. Recently, it has attracted the attention of researchers, because of its hepatoprotective (ability to prevent

damage to the liver) properties. No effective specific therapy is available for viral Hepatitis but *P. niruri* has shown clinical efficiency in viral Hepatitis B (Paranjape, 2001).

*P. niruri* is an annual plant, its stem is angular with numerous distichous, ellipticoblong leaves. Flowers are yellow and very numerous; monoecious with 1-3 staminate flowers and solitary pistillate flower borne axillary. Fruits capsule, very small, globose, smooth, seeds 3-gonous, longitudinally ribbed on the back. Seed to seed cycle occurs in two or four weeks (Caius 1986), (Agharkar 1991). Its root, leaves, fruits, milky juice and whole plants are used as medicine. According to Ayurvedic system of medicine it is considered acrid, cooling, alexipharmic and useful in thirst, bronchitis, leprosy, anemia, urinary discharge, anuria, boilioussness, asthma, for hiccups, and as a diuretic. According to Unani system of medicine, it is stomachic and good for sores and useful in Chronic dysentery. Fruits useful for tubercular ulcers, wounds, sores, scabies and ring worm (Agharkar 1991, Krishnamurty 1993). The fresh root is believed to be an excellent remedy for jaundice.

In many parts of India, it is commonly used for the treatment of snake bite. The active compounds phyllanthin and hypophyllanthin, nirtetralin and phyltetralin have been isolated from leaves, (Rastogi and Mehrotra, 1991). The plant is used as a fish poison. In many parts of India especially in deserts, the roots mixed with *Commiphora mukul* are given to camels to cure indigestion. The decoction of leaves and stem are used for dyeing cotton black, (Singh et al; 1996).

*P. niruri* is one of the medicinal plants used to treat malaria in India and Nigeria. *P. niruri* has been used traditionally to treat various illnesses including renal stones, gastrointestinal disturbance, cough, hepatitis, gonorrhoea, fever and malaria. It has also been reported to possess hypoglycemic activity (Hukuri, et al; 1988), angiotension converting enzyme inhibition (Ueno, et al; 1988), lipid lowering activity (Khanna, et al; 2002), anti HIV activity (Qian cutron, et al; 1996) and anti cancer activity (Giridharan, et al; 2002).

## **1.2 Aim and objectives**

This study is aimed at showing which of the plants above is more effective in the treatment of diseases caused by micro-organisms based in the natural products present in them.

The specific objectives include;

- a. Determination of antibacterial effect of *P. amarus* and *P. niruri*.
- b. Determination of anti fungal effect of *P. amarus* and *P. niruri*.

## **THE ROLE OF PLANTS IN THE TREATMENT OF DISEASES CAUSED BY MICRO-ORGANISMS BASED IN THE NATURAL PRODUCTS**

**The complete project material is available and ready for download. All what you need to do is to order for the complete material. The price for the material is NGN 3,000.00.**

**Make payment via bank transfer to Bank: Guaranteed Trust Bank, Account name: Emi-Aware technology, Account Number: 0424875728**

**Bank: Zenith Bank, Account name: Emi-Aware technology, Account Number: 1222004869**

**or visit the website and pay online. For more info: Visit <https://researchcub.info/payment-instruct.html>**

**After payment send your depositor's name, amount paid, project topic, email address or your phone number (in which instructions will sent to you to download the material) to +234 70 6329 8784 via text message/ whatsapp or Email address: [info@allprojectmaterials.com](mailto:info@allprojectmaterials.com).**

**Once payment is confirmed, the material will be sent to you immediately.**

**It takes 5min to 30min to confirm and send the material to you.**

**For more project topics and materials visit: <https://researchcub.info/> or For enquiries: [info@allprojectmaterials.com](mailto:info@allprojectmaterials.com) or call/whatsapp: +234 70 6329 8784**

**Regards!!!**