

PDF - EXTRACTION, CHARACTERIZATION AND ANTI MICROBIAL SCREENING OF WHITE STAR
APPLE (*Cryosophyllum Albidum*) SEED OIL - researchcub.info **TABLE OF CONTENT**

CONTENT

Title page

Declaration

Certification

Dedication

Acknowledgment

Table of content

Abstract

CHAPTER ONE

1.1 INTRODUCTION

LITERATURE REVIEW

1.2 TYPES OF OIL

1.2.1 Drying oil

1.2.2 Semi-Drying Oil

NON- DRYING OIL

1.3 COMPOSITION OF OIL

1.4 PIGMENT

VITAMINS

ANTIOXIDANTS

1.7 BOTANIC DESCRIPTION

1.8 FUNCTIONAL USES

CHAPTER TWO

MATERIALS AND METHODS

2.0 SAMPLE COLLECTION

2.1 OIL EXTRACTION

2.2 DETERMINATION OF SPECIFIC GRAVITY

2.3 DETERMINATION OF DENSITY

2.4 DETERMINATION OF FREE FATTY ACID

CONTENT

DETERMINATION OF SAPONIFICATION VALUE

DETERMINATION OF IODINE VALUE

DETERMINATION OF PEROXIDE VALUE

ANTI-MICROBIAL ACTIVITY SCREENING

REAGENTS AND MEDIA

PREPARATION OF FUNGAL TEST ORGANISM

PREPARATION OF THE SENSITIVE TEST AGAR

PREPARATION OF THE NUTRIENT DEXTROSE

AGAR

2.8.5 THE PUNCHED AGAR DIFFUSION METHOD AS

RECOMMENDED BY BRYANT (1972)

2.7.6 BACTERIAL INOCULATION AND INCUBATION

2.8.7 FUNGAL INOCULATION AND INCUBATION

READING INHIBITION ZONES OF THE OIL

CHAPTER THREE

TABLE 3.1 ORGANOLEPTIC CHARACTERISTICS OF
Crysophylum albidum SEED OIL

3.2 CHARACTERIZATION OF THE SAMPLE

TABLE 3.3 RESULT OF ANTI-BACTERIAL ACTIVITY OF *C.*
albidum OIL ON TWO GRAM POSITIVE BACTERIA

TABLE 3.4 RESULT OF ANTI-BACTERIAL ACTIVITY OF *C.*
albidum OIL ON TWO GRAM NEGATIVE BACTERIA

TABLE 3.5 RESULT OF ANTI-FUNGAL ACTIVITY OF *C. albidum*
OIL ON TWO TEST FUNGI

3.6 RESULT OF MINIMUM INHIBITORY CONCENTRATION
(MIC) OF *C. albidum* OIL ON SIX TEST ORGANISM

CHAPTER FOUR

4.0 DISCUSSION

4.1 CONCLUSION

RECOMMENDATION

REFERENCES

APPENDIX I

ABSTRACT

Crysophylum albidum oil was extracted from its seed. The percentage yield was 2.56%. The characterization of the oil showed that the refractive index is 1.487, peroxide value is 45.4mg/kg, iodine value is 50.76g, saponification value is 105.188, free fatty acids 47.46 and acid value is 94.92. The Punched Ager Diffusion Method was used to assay for the antimicrobial and anti fungal properties of the oil in the test isolate. The antimicrobial and anti fungal activity showed some inhibitory effects against test organisms; *Staphylococcus aureus*, *E. coli*, *B. subfilis*, *C. albican* and *A. flavons*, but non for *S. pyogens*. The minimum inhibitory concentration of these test organisms are as follows; *Staphylococcus aureus* 0.16, *E. coli* 0.06, *B. subfilis* 0.14, *C. albican* 2.50 and *A. flavons* 0.40.

The pharmacological screening confirmed the medical value of this plant oil and it established a good support for the sample in herbal medicine and as a base for the development of new drugs and phytomedicine.

CHAPTER ONE

1.1 INTRODUCTION

Oil belongs to the body of lipids which is a broad group of naturally occurring hydrophobic molecules that contain carbon. They include fats, waxes, sterols, fats-soluble vitamins, etc. This is divided into saturated and unsaturated fatty acid. Saturated fatty acids are known as fats usually obtained from animals while oil belonging to the unsaturated group is usually gotten from plants.

Crysophyllum albidum (White Star Apple) is a plant grown in the mid-Africa particularly in Nigeria, Cameroon, etc. *Crysophyllum albidum* (G. Don) is a tropical edible fruit tree. It belongs to the family sapotaceae which has up to 800 species and make up almost half the order Ebernales[1]. Okigbo[2] and Okafor[3] reported that a few species of *Crysophyllum* grow in the boarder regions between the forest and Savanna in Nigeria. The plants as reported by Bada[4], can be found in Nigeria, Cameroon, Cote d' Ivoire, Uganda and Niger republic. The species is called different names depending on the locality. The table below shows some locality and names of the species.

SOME LOCALITIES AND THE SPECIE'S NAMES.

LOCALITY		NAME
Igbo		Udala
Yoruba		Agbalumo
Edo		Otien
Scientific Name		<i>Chrysophyllum albidum</i> (G.Don)

Flowering is usually from April to June. The flowers are sessile and occur in clusters in the leaf axils of the fruiting branch. The fruits are normally January to March but the fruit have been seen recently in November.

Fruiting branch of *C. albidum*

When ripe, the fruits are pale orange, edible, ovoid in shape and pointed at the apex. It is a berry with crescent shaped seeds. See the diagram below.

C. albidum Fruits with revealed seeds.

C. albidum fruit contains 8.8% protein, 17.1% oil, 21% sugar 11% starch [5]. The fruits are generally eaten by both old and young people. *C. albidum* fruits have been reported to be the highest source of ascorbic acid, excellent source of vitamins, irons, flavour to diets and raw material to some manufacturing industries [6]. *C. albidum* has been classified by Okafor [3] and Okigbo [2] as a wild uncultivated fruit tree which occurs naturally in the high forests or bushes and seldom planted as a fruit tree. Boys, girls and women generally pick *C. albidum* fruits from the wild forest for their consumption and sales. *C. albidum* fruit is a great source of economic empowerment to rural dwellers. This is because a fruit is sold at N5 (Five naira), N10 (Ten naira) depending on the size of the fruit. The anti-microbial effect of African star apple (*C. albidum*) belonging to the family sapotaceae is that the roots and leaves are used for medicinal purposes[7]. The seeds are used for local games[4] or discarded. The seeds of *C. albidum* are usually thrown away and no report has existed on the use of oils from non-utilized oil seeds for the treatment of wounds or as skin ointments.

OBJECTIVES OF THE RESEARCH

The objectives of this research work are;

- To extract and characterize the oil obtained from *C. albidum* seed.
- To determine the antifungal/antibacterial activity of *C. albidum* seed oil.

XTRACTION, CHARACTERIZATION AND ANTI MICROBIAL SCREENING OF WHITE STAR APPLE (*Crysophyllum Albidum*) SEED OIL

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