**ISOLATION AND IDENTIFICATION OF FUNGI FROM COMPOST AND GARDEN SOILS.**

BY

MBAH CHINEMEREM JENNIFER.

REG NO.: U14/NAS/MCB/062.

DEPARTMENT OF MICROBIOLOGY.

FACULTY OF NATURAL AND APPLIED SCIENCE.

GODFREY OKOYE UNIVERSITY

UGWUOMU NIKE, ENUGU.

IN PARTIAL FULFILMENT FOR THE AWARD OF BACHELOR OF SCIENCE (B. Sc.) DEGREE IN MICROBIOLOGY

SUPERVISOR: PROF.J.I. OKAFOR.

JULY, 2018

**APPROVAL PAGE**

This project written under the direction of candidate project supervisor and approved members of the project committee, has been presented and accepted by the department of Microbiology, Godfrey Okoye University in partial fulfillment of the requirement for the award of Bachelor of Science(B.Sc.) Degree in Microbiology.

SIGNATURE DATE

**Mbah Chinemerem Jennifer**

Student

**Prof. J. I. Okafor**

Project supervisor

**Dr. (Mrs.) Marian N. Unachukwu**

Head of department

**DEDICATION**

To almighty God.

**ACKNOWLEDGEMENT**

I am thankful to my sincerely Supervisor Prof. J. I. Okafor for her endurance towards me during the period I was undergoing my work, I also thank my parents for their love and financial assistance, I will also like to thank my uncle for his assistance when I was doing my corrections and I also thanks to my friends for their views and opinions expressed in this project. **TABLE OF CONTENT**

Title page……………………………………………………………………………………i

Approval page……………………………………………………………………………....ii

Dedication…………………………………………………………………………………..iii

Acknowledgment……………………………………………………………………………iv

Table of content……………………………………………………………………………..v

List of Tables………………………………………………………………………………..vii

List of Figures……………………………………………………………………………….viii

Abstract……………………………………………………………………………………....ix

**CHAPTER ONE**

* 1. Introduction……………………………………………………………………………….1
  2. Aim and objectives………………………………………………………………………..3

**CHAPTER TWO**

2.0 Literature Review…………………………………………………………………..........4

2.1 Origin of fungi……………………………………………………………………………4

**CHAPTER THREE**

3.1 Materials…………...…………….……….………………………………………………13

3.2 Methods…………………….………….……………………………................................13

3.2.1 Collection of soil samples…………..….…………………………………………………13

3.2.2 Isolation of fungi from the soil…………………………………………………………….13

3.2.3 Preparation of soil dilutions………………………………………………………………..14

3.2.4 Making spread plates for fungi culture…………………………………………………….14

3.3 Identification of fungi using slide culture technique………………………………….………14

3.4 Staining of fungi using lacto phenol blue….…………………………………………………15

**CHAPTER FOUR**

4.1 Results……………………………………………………………………………………….17

**CHAPTER FIVE:**

5.1 Discussions…………………………………………………………………………………..23

**Conclusion………………………………………………………………………………………25**

**References……………………………………………………………………………………….26**

**LIST OF TABLES**

**TABLE 1:** MOPHOLOGY OF THE FUNGI IN COMPOST SOIL………………………17

**TABLE 2:** MOPHOLOGY OF FUNGI IN GARDEN SOIL………………………………18

**TABLE 3:** IDENTIFICATION OF MICROBIAL ISOLATES…………………………….19

**LIST OF FIGURES**

**Fig.1:** *Aspergillus fumigatus*…………………………………………………………………20

**Fig.2:** *Aspergillus niger* ……………………………………………………………………..21

**Fig.3:** *Mucor* sp. ……………………………………………………………………………..22

**ABSTRACT**

This project was designed for the isolation and identification of some fungi found in the soil. These microorganisms may be either pathogenic or non-pathogenic to the plants and humans. Two soil samples one from garden soil and the other one from compost soil were put into serial bags and taken to the laboratory for analysis. One gram of each sample was put into 9ml of serial water. Using pipette one in ten folds dilutions was done on each sample. Exactly 0.1 ml of each dilution was poured into Sabroaud dextrose agar plates and was spread using spreader on each Sabroaud dextrose agar plates and left on the table for 24 to 48hrs. The representative growth on each plate was sub-cultured on Sabroaud dextrose agar slant to obtain pure culture for identification and left for at least 72hrs for spores to be formed. Slide culture technique was used for proper identification of the filamentous fungi. Lacto phenol blue was used to stain the growth on the slide and cover slip and viewed under the microscopy. A total of three fungal isolates were obtained from the soil samples on the Sabroaud dextrose agar plates. Three fungi species, were identified and from the fungal isolates species belonging to the genera *Aspergillus* spp and *Mucor* sp. The identified soil fungi from the two soil sample were *Aspergillus* *niger, Aspergillus fumigatus* and *Mucor* sp. and the three were isolated from two soil samples. In this result fungi growth occur more in compost soil than in garden soil and the most common organism was *Aspergillus* spp. The two soil fungi obtained in this work were known to be pathogenic to human beings. Some *Aspergillus* spp are known to produce mycotoxic which can cause disease in man e.g. Aflatoxins. It is a cumulative toxins. Also *Muco*r sp are known to cause disease in man through inhalation of the spores in the air e.g. systematic mucormycosis in diabetic patients.