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**EVALUATION OF ANTIDIARRHEAL ACTIVITY OF THE ROOT BARK OF**

Tamaridus indica

**BY**

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**ABSTRACT**

**CHAPTER ONE**

**1.0 INTRODUCTION**

**1.1 Background of the study**

**1.2 Statement of the problem**

**1.3 Significance of the study**

**1.4 Justification of the study**

**1.5 Aim and Objectives**

**1.5.1 Aim of the study**

**1.5.2 Objective of the study**

**CHAPTER TWO**

**2.1 Medicinal Plants**

**2.1.1 *Tamarindus indica***

**2.2 Test microorganisms**

**2.2.1 *Escherichia coli***

**2.2.2 *Salmonella typhi***

**2.2.3 *Staphylococcus aureus***

**2.3 Phytochemicals in medicinal plants**

Secondary plant metabolites (Phytochemicals) have been extensively investigated as a source of medicinal agents (Krishnaraju, 2005). Plants can synthesize and accumulate a great variety of phytochemicals in their cells including saponins, tannins, flavonoids, cyanogenic, phenolic compounds, lignins, lignans, alkaloids and glycosides (Okwu, 2004). Plants also have a great potency of antimicrobial activity due to the presence of phenolic compounds and essential oils (Aboaba and Efuwape, 2001). Medicinal plants have been known to produce an array of phytochemicals with recognized antibacterial activity belonging to chemical structural classes: phenolics, terpenoids, alkaloids, lectins, polypeptides, and polyacetylenes but the most bioactive constituents are alkaloids, tannins, flavonoids, and phenolic compounds (Hill, 1995). The screening of plant extracts and plant products for antimicrobial activity has shown that higher plants represent a potential source of novel antibiotic prototypes (Afolayan, 2003). Numerous studies have identified compounds within herbal plants that are effective antibiotics (Afolayan, 2003). Some of the commonly used traditional remedies have already produced compounds that are effective against antibiotic-resistant strains of bacteria (Kone *et al., 2004*).

**2.3.1 Tannins**

Tannin is astringeny vegetable product found in a wide range of plants parts ranging from the barks, roots, fruits, leaves, galls and roots (Ramakrshnan, 2006). They occur naturally In plants and are water soluble phenolic compounds of the higher molecular weight of about 500 – 3000 containing phenolic

Hydroxyl groups that make them to effectively cross-link with proteins and other macromolecules (Ramkrishnan, 2006).

Tannins are generally found in plants and they are thought to function as chemical defenses against pathogens and herbivores (Gedir *et al., 2005*). They have been commercially used primarily in the preservation of leather, making glue stains and mordant (Kanth *et al., 2009*). It has also been used in the vegetable industry in different concentration in picking process to provide protection against bacteria, mold, and yeasts (Andrade *et al., 2005*). Antimicrobial activity of tannins has been

**2.3.2 Flavanoids….**

**2.3.3 Alkaloids**

**2.3.4 Saponins**

**2.4 Current trend in Phytochemistry and Medicinal Plant**

**CHAPTER THREE**

**3.0 MATERIAL AND METHODS**

**3.1.1 Equipment / instruments**

**3.1.2 Reagents and solvents**

**3.2 Sample collection**

**3.3 Methods**

**3.3.1 Collection of Plant and identification of Plant meterial**

**3.3.2 Preparation of plant extract**

**3.3.2.1 Qualitative phytochemical analysis**

**3.3.2.2 Tannins**

**3.3.2.3 Flavonoids**

**3.3.2.4 Alkaloids**

**3.3.2.5 Saponins**

**3.3.2.6 Phenols**

**3.3.3 Microorganisms**

**3.3.4 Analysis of antidiarrheal activity**

**3.3.4.1 Preparation of sample extract for microbiological assay**

**3.3.4.2 Disc diffusion technique**

**3.3.4.3 Determination of Minimum Inhibitory Concentration (MIC)**

**3.3.4.4 Determination of Minimum Bactericidal Concentration (MBC)**

**CHAPTER FOUR**

**4.0 Expected Result and Conclusion**

At the end of this research work, the phytochemical screening should reveal the presence of bioactive components of the plant extract such as flavonoids, alkaloids, saponins, tannins, and the antidiarrheal activity should indicate that the plant contains medicinal and therapeutic properties and can be used as medicine for combating diseases causes by selected bacteria.

**4.1 Expected Result**

**4.2 Conclusion**