

ANTIMICROBIAL PROPERTY OF *Bauhinia monandra* (ALIBANGBANG)  
LEAF EXTRACTS AGAINST SELECTED PATHOGENS

THESIS

JUNEE ELLEIGH C. OWAY

YRHIZ F. OWAY

LINDSAY MARIE V. REYES

College of Nursing  
CAVITE STATE UNIVERSITY  
Indang, Cavite

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Antimicrobial property of *Bauhinia*  
*monandra* (ALIBANGBANG) leaf extracts  
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**JUNEE ELLEIGH C. OWAY**  
**YRHIZ F. OWAY**  
**LINDSAY MARIE V. REYES**  
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## ABSTRACT

**OWAY, JUNE E. ELLEIGH C., OWAY, YRHIZ F., REYES, LINDSAY MARIE V. Antimicrobial Property of *Bauhinia monandra* (Alibangbang) Leaf Extracts Against Selected Pathogens.** Undergraduate thesis. Bachelor of Science in Medical Technology. Cavite State University, Indang, Cavite. October 2015. Adviser: Dr. Adelaida E. Sangalang.

This study entitled “Antimicrobial Property of *Bauhinia monandra* (Alibangbang) Leaf Extracts Against Selected Pathogens” was conducted at the laboratory of the Department of Medical Technology, College of Nursing, Cavite State University, Indang, Cavite. It generally aimed to determine the antimicrobial property of *Bauhinia monandra* against selected microorganisms. Specifically, it aimed to determine the constituents of *Bauhinia monandra* through phytochemical analysis; which plant extract would be more potent as an antimicrobial agent; and which pathogen would be most susceptible to the plant extract.

The antimicrobial property of *Bauhinia monandra* was evaluated against *Escherichia coli*, *Bacillus subtilis*, *Candida tropicalis* and *Fusarium oxysporum*. Two extracting solvents were used in the study namely ethanol and hexane. The treatments were as follows: T<sub>1</sub> used hexane extract; T<sub>2</sub> used ethanol extract; T<sub>3</sub> used positive control (ciprofloxacin for bacteria and fluconazole for fungi); lastly, T<sub>4</sub> used the negative control (distilled water). For antibacterial assay, agar well diffusion technique was used in which the agar was suspended with each bacterial isolate. Each treatment was placed in four uniform wells cut from the agar. The zone of inhibition was measured after 24 hours of incubation at 37°C. On the other hand, poisoned agar plate technique was used for



antifungal assay. Each fungus was cultivated in the center of the plate, and incubated at 25°C. The diameter of the fungal growth was measured after 14 days in which the negative control plate was completely colonized with mycelium.

The study revealed that only the ethanol leaf extract of *B. monandra* exhibited inhibition of growth against *Bacillus subtilis* while hexane leaf extract showed no zone of inhibition. Both ethanol and hexane extracts of *Bauhinia monandra* against *Escherichia coli* showed no zone of inhibition as well. In antifungal activity, hexane and ethanol leaf extract against *Fusarium oxysporum* yields less antifungal activity as compared with the negative control. Moreover, only the ethanol leaf extract inhibited the growth *Candida tropicalis* completely whereas hexane was not as effective as ethanol.

Based on the results obtained in the study, it was recommended to conduct further researches using the same plant involving the other parts of the plant to determine any antimicrobial property; to perform the antimicrobial assay using different concentrations of the plant extract which can be a factor affecting the result of the assay; and to make use of other extracting solvents to isolate the chemical constituents.

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Junee Elleigh C. Oway  
Yrhiz F. Oway  
Lindsay Marie V. Reyes

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## INTRODUCTION

Plants were being used up in various studies to uncover any therapeutic property to fight off diseases especially to eradicate the microorganisms which cause such diseases. These studies were made on plants which are locally available. *Bauhinia monandra* (Alibangbang) is a native of south eastern Asia and is widely planted in the Philippines as an ornamental flowering tree. It grows 3 to 15.2 m in height and 0.5 m in diameter. The leaves are deeply lobed and are shaped like butterfly wings. The smooth gray bark of the tree becomes scaly and reddish brown as it grows older (Connor, 2002).

Not much information is known about *Bauhinia monandra* but discovery of this plant's uses is still in progress. It is used traditionally as a treatment for diabetes in Brazil. This hypoglycemic activity was evaluated in a study conducted by Alade *et al.* (2011). They concluded that the plant had stimulating effect on the INS-1 cells (an insulin releasing insulinoma cell line) leading to the release of insulin justifying the