CENTRAL LUZON STATE UNIVERSITY

PHYTOCHEMICAL SCREENING AND DETERMINATION OF THE BIOLOGICAL ACTIVITIES OF *Bambusa blumeana* var. *luzonensis* Schultes AND *Schizostachy brachycladum* Kurz SHOOT EXTRACTS

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An Undergraduate Thesis Submitted to the Faculty of the Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Muñoz, Nueva Ecija Philippines, In Partial Fulfillment Of the Requirements for the Degree

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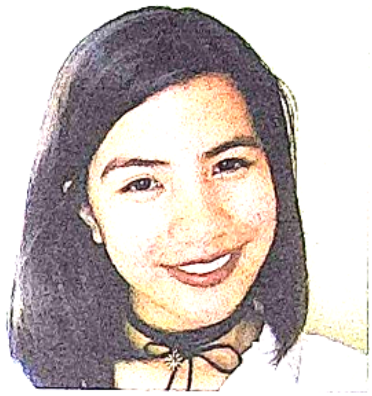

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDIX TABLES

LIST OF APPENDIX FIGURES

ABSTRACT

GALAPON, ROCHELLE V., Bachelor of Science in Biology, Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, June 2017. **PHYTOCHEMICAL SCREENING AND DETERMINATION OF THE BIOLOGICAL ACTIVITIES OF *Bambusa blumeana* var. *luzonensis* Schultes AND *Schizostachy brachycladum* Kurz SHOOT EXTRACTS.**

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This study was carrieds out to evaluate the phytochemical, antibacterial, and antioxidant activity of *B. blumeana* var. *luzonensis* and *S. brachycladum* shoot ethanol and hot water extracts. Phytochemical screening revealed that cardiac glycosides, flavonoids, saponins, tannins and terpenoids were present in all bamboo shoots extracts. Steroidwas present only in the ethanol extracts of *B. blumeana* var. *luzonensis* and *S. brachycladum* shoots.

Antibacterial activity as eradicant and protectant of the four bamboo shoot extracts were determined using disc diffusion method. Eradicant test against *E. coli* revealed that *S. brachycladum* shoot ethanol extract had the biggest zone of inhibition at 12 and 24 hours of incubation with 8.68 mm and 8.36 mm. On the other hand, *S. brachycladum* shoot hot water extract produced the widest zone of incubation against *S. aureus* at 12 and 24 hours of incubation with 13. 40 mm and 15.32 mm. Statistical analysis of four bamboo shoot extracts were comparable to the negative control

whichsuggest the weak antibacterial activity as eradicantagainst the two human pathogen. Meanwhile, for the protectant test, *E. coli*produced the smallest zone of colonization in *B. blumeana* var. *luzonensis* ethanol extract with 7.14 mm and 9.97 mm.Whereas*S. aureus*formed the smallest zone of colonization in *S. brachycladum* shoot ethanol extract of 6.28 mm after 12 hours of incubation while *B. blumeana* var.*luzonensis*ethanol extracts had the smallest zone of colonization at 24 hours of incubation.

Additionally, antioxidant analysis showed that, all four bamboo shoot extracts possessed DPPH radical scavenging activity.*B. blumeana* var. *luzonensis* shoot ethanol extract had the highest yield with 64. 80 % radical scavenging activity and 27.59 mg AAE/g sample phenolic content.

Thus, results of the study revealed the presence of phytochemicals in the tested bamboo shoot extracts which led to its antimicrobial and anti-oxidant properties.

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