CENTRAL LUZON STATE UNIVERSITY

PHYTOCHEMICAL SCREENING AND DETERMINATION OF THE BIOLOGICAL ACTIVITIES OF *Bambusa vulgaris* var. *striata* (Loodd ex Lindel) AND *Dendrocalamus asper* (Schult ex Backer) 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 Munoz, Nueva Ecija Philippines, In Partial Fulfillment of the Requirements for the Degree

BACHELOR OF SCIENCE IN BIOLOGY

JUNE 2017

Republic of the Philippines
CENTRAL LUZON STATE UNIVERSITY
Science City of Muñoz, Nueva Ecija

COLLEGE OF ARTS AND SCIENCES
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APPROVAL SHEET

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ACKNOWLEDGEMENT

The author would like to take this opportunity to express his overwhelming gratitude to those who have contributed for the completion of his manuscript.

First, the author would like to offer his sincerest and deepest gratitude to his thesis adviser, Prof. Mary Jhane G. Valentino, for sharing her well-founded knowledge, giving the trust, motivation, and guidance all throughout the completion of this study. To his critic, Prof. Kristine Grace D. Waing, for her heartfelt advice and constructive comments that lead for the improvement of the paper. To the Department Research Coordinator, Mr. Rich Milton R. Dulay, a sincere thanks is given for the guidance and support along the way without his help the paper would not have been possible Also, the author gives his deep gratitude to all the faculty members of the Department of Biological Sciences, to Ate Liezl, Kuya Dennis, and Kuya Franz for providing the laboratory instruments and tools used in the thesis.

To the authors close friends; Frances, Ate Jenny, Darlina, Glydel, Jenna, MJ, Robert, Armel and Kuya Jerick for their kind and valuable friendships in his study and made his college life unforgettable and worthy living. The author would also like to show his deep appreciation and gratitude to his co-advisee, Rochelle and Ate Kim for their valuable acquaintance, they are always there give a helping hand inside the laboratory. To his boardmates: Loloy, Kuya Jerome, Carlos, Kristel, Karen and Jeannel for making his life colorful and inspiring during his stay in CLSU. To his childhood friends Allisa, Glydel, Wency, Ericka, Fhemuel, Kimberly, Shiela and Jesica which served as his

shoulder during the time of trials and darkness in his life. Their love and support is deeply appreciated. The author would also like to express his sincere gratitude to his relatives, Tita Nita, Tita Leonor, Tita Ebot, Tito Joy, for their guidance, support, free food, home, and for always reminding him to set-up his goals and to know his priorities in life.

The author would like to expound his very special heartfelt appreciation and thank you to his parents, Mr. Mario L. Baguistan Jr, and Mrs. Amelita R. Baguistan for giving him the undying love, encouragement, endless inspiration, hard works and financial support to continue his study and for always reminding him to trust in the power of God. Their unconditional love and prayers served as the inspiration of the author.

And most especially to God Almighty, for giving him the strength to surpass all the challenges and struggles in life, for His grace, blessings and infinite care to the author in order to be safe in all his deed.

BON JOVI RAMOS BAGUISTAN

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ABSTRACT

BAGUISTAN, BON JOVI R. 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 vulgaris* var. *striata* **(Lood ex Lindel) and** *Dendrocalamus asper* **(Schult ex Backer) SHOOT EXTRACTS.**

Manuscript No. BIO-M- 2nd17-014

Adviser: Mary Jhane G. Valentino, M.Sc.

This study was conducted to determine the presence of phytochemicals such as alkaloids, cardiac glycosides, flavonoids, saponins, steroids, tannins, and terpenoids. Additionally, the antibacterial and anti-oxidant properties of *B. vulgaris* var. *striata* and *D. asper* shoot extracts were also evaluated. The antibacterial property was evaluated using disc diffusion method against two pathogens *E. coli* and *S. aureus.* Meanwhile, DPPH radical scavenging assay was used for the determination of the antioxidant activity and the total phenolic content of the shoot extracts.

The phytochemical screening of four shoot extracts revealed the presence of cardiac glycosides, flavonoids, terpenoids, and saponins In addition, steroids are also present in ethanol extract of *B. vulgaris* var. striata and *D. asper* shoot while tannins were present only in ethanol extract of *B. vulgaris* var. *striata* shoots.

For the antibacterial activity, the ethanol extract of *B. vulgaris* and *D. asper* shoots showed a minimal eradicating activity against *E.coli* and strong eradicating

activity against *S. aureus* and at 12 and 24 hours of incubation. In addition, ethanol extract of *B. vulgaris* var. *striata* showed protectant activity against *E.coli* and *S. aureus* at all incubation period.

Furthermore, the antioxidant activity of ethanol extract of *D. asper* showed the highest radical scavenging activity with a mean of 64. 80 % .Meanwhile, the highest total phenolic content was recorded in *B. vulgaris* var. *striata* ethanol extract with 49.90 mg AAE/g sample. The antioxidant activity and total phenolic content has the potential candidate as a good source of natural antioxidant as they fight against free radicals.

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