

**MYCOCHEMICAL PROFILING AND BIOLOGICAL ACTIVITIES
OF FUNGI (*Aspergillus niger* and *Rhizomucor pusillus*)
ASSOCIATED WITH VERMICAST**

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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
(Microbiology)**

JUNE 2018

ACCEPTANCE SHEET

This undergraduate thesis entitled “**MYCOCHEMICAL PROFILING AND BIOLOGICAL ACTIVITIES OF FUNGI (*Aspergillus niger* and *Rhizomucor pusillus*) ASSOCIATED WITH VERMICAST**” prepared and submitted by **JAMILLE B. SABADO** in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN BIOLOGY (MICROBIOLOGY)**, is hereby accepted.


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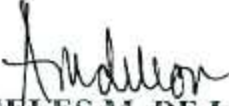

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ACKNOWLEDGMENT

The completion of this work is not the end but only the beginning of another phase of journey to the authors life. She would like to acknowledge the support, trust, guidance and all the love she received from the people who in one way or another contributed to this paper.

To her adviser, Ms. Mary Jhane G. Valentino, M.Sc., for her unending support, constant guidance and for bringing out the best in this research. Also, for being an example to the author to work hard each day. Words are not enough.

To her critic, Ms. Eden Salvador-David, Ph.D., for her kindness, invaluable time, guidance, support and for sharing her expertise for the betterment of this research.

To the Department Research Coordinator, Mr. Rich Milton R. Dulay, M.Sc., for his healthy criticism, for patiently checking the format for the betterment of this manuscript.

Also, the researcher wants to extend her deepest gratitude to Mr. Hanson Villanueva of Saint Mary's University, Bayombong, Nueva Vizcaya. Huge thanks is also be given to Mr. Paulo Lucero and Mr. Nelson Santiago, Ph.D. of Philippine Center for Post-Harvest Development and Mechanization, Science City of Munoz, Nueva Ecija for the identification of fungal isolates.

The author would also like to thank Kuya Dennis Del Rosario for his untiring assistance during the conduct of this research.

To her friends and fellow thesis advisees for the countless memories and pessimistic thoughts.

To the author's family—TEAM SABADO, to her Mama, Papa, Ate Aika, JC and Inang for being her source of strength and serves as her greatest motivation. For their unconditional love, support and for believing in her all throughout for the past 19 years.

And above all, to the Heavenly Father, for the wisdom and spirit which are the most important.

The author wouldn't have ended her thesis any better!

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ABSTRACT

SABADO, JAMILLE B., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **JUNE 2018, MYCOCHEMICAL PROFILING AND BIOLOGICAL ACTIVITIES OF FUNGI (*Aspergillus niger* and *Rhizomucor pusillus*) ASSOCIATED WITH VERMICAST**

Adviser: MARY JHANE G. VALENTINO, M.Sc.

This study was undertaken to determine the mycochemical composition of fungi associated with vermicast namely; *Aspergillus niger* and *Rhizomucor pusillus*. Their antibacterial potential as protectant and eradicator and their ability to scavenge free radicals or their DPPH radical scavenging activity were also evaluated.

Mycochemical screening of *A. niger* and *R. pusillus* ethanolic extract and fungal spent revealed the presence of flavonoids and terpenoids. Tannins was only detected in the *A. niger* ethanolic extract. In addition, alkaloids was only observed in *R. pusillus* ethanolic extract.

For the antibacterial activity as protectant, at 12 and 24 hours of incubation, the least zone of colonization of *S. aureus* and *E. coli* were recorded in plates treated with *A. niger* ethanolic extract (9.64 mm and 12.35 mm for *S. aureus*; 9.60 mm and 12.37 mm for *E. coli*) and *R. pusillus* ethanolic extracts (0.00 mm and 13.03 mm for *S. aureus*; 19.35 mm and 32.44 mm for *E. coli*). On the other hand, for the antibacterial activity as eradicator, zone of inhibition at 12 and 24 hours of incubation against the bacterial pathogens were recorded in ethanolic extract of *A. niger* (9.43 mm and 9.28 mm in *S. aureus*) and *R. pusillus* (11.94 mm and 11.75 mm in *S. aureus*; and 9.40 mm and 9.08 mm in *E. coli*)

Lastly, for the DPPH radical scavenging activity, among the four extracts, *A. niger* ethanolic extract recorded the highest ability to scavenge free radicals with 73.03% followed by *R. pusillus* ethanolic extract with 71.86%. *A. niger* spent and *R. pusillus* fungal spent were recorded to be the least with percentage of 45.20% and 29.96% respectively.

The present study indicates that the secondary metabolites of the extracts can be act as source of wide spectrum antibiotics and antioxidant.

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