OPTIMIZATION OF LIQUID CULTURE CONDITIONS OF *Pleurotus cystidiosus* AS SOURCE OF MYCOCHEMICALS AND ANTIOXIDANTS

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ACCEPTANCE SHEET

This undergraduate thesis entitled **"OPTIMIZATION OF LIQUID CULTURE CONDITIONS OF *Pleurotus cystidiosus*AS SOURCE OF MYCOCHEMICALS AND ANTIOXIDANTS"** prepared and submitted by **HZASELL S. ABALOS**, in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN BIOLOGY** is hereby accepted.

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BIOGRAPHICAL SKETCH

The author, Hzasell Santos Abalos, was born on November 25, 1996 at Bacag Villasis, Pangasinan and currently residing at Ladies Dorm 1 (Zinnia) CLSU, Science City of Muñoz, Nueva Ecija. She is the second eldest of Perfecto Ang Abalos and Erlinda Santos Abalos.

She took her primary education at Bacag Central School and her secondary education was at the Don Ramon E. Costales Memorial National High. She graduated with highest of honors in her section. Hzasell was not only academically inclined but also good in the other fields such as arts and dancing. In the four years she spent in high school, she was a performer and member of an Artist Club.

In 2013, she was admitted at the Central Luzon State University under the Bachelor of Science in Biology. She became a member and a scholar of Tanghalang Gagalawsa CLSU, a cultural dance group, and won the 4th place in DC-SUC III / CIRPS Socio-Cultural and Literary Festival 2014, and 2nd place in DC-SUC III / CIRPS Socio-Cultural and Literary Festival 2016.The author also joined an artist organization called GUHIT Pinas. The author completed her On-Job-Training under the Technology outreach Station- Freshwater, Looc, Castillejos, Zambales of the Bureau of Fisheries and Aquatic Resources Region III.

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ABSTRACT

ABALOS, HZASELL S., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **JUNE 2018, OPTIMIZATION OF LIQUID CULTURE CONDITIONS OF *Pleurotus cystidiosus* AS SOURCE OF MYCOCHEMICALS AND ANTIOXIANTS**

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Pleurotus cystidiosus has a unique biology and one of the most interesting of all the oyster mushrooms because of its convenience and accessibility. However, it remains uncultivated for mycelial biomass production. Thus, the present work established the optimum liquid culture condition for the mycelial biomass production of *P. cystidiosus* for elucidation of functional activities. In order to provide information on the biomass production and biological activities of *P. cystidiosus*, optimization of liquid culture conditions, analysis of radical scavenging activity and total phenolics and mycochemical screening were analyzed. The coconut water with pH 6.5 incubated in room temperature (30°C), alternating light and dark, and static condition were the ideal cultural conditions for the mycelial growth of *P. cystidiosus*. Mycelia produced in agitated condition registered the highest radical scavenging activity of 35.55%, while the culture spent recorded 31.22%. However, mycelia produced in static condition exhibited 31.39% scavenging activity while its spent had 17.80%. Agitated spent recorded higher total phenolic content (112.13 mg GAE/g sample), while the mycelia produced gave 34.00 mg GAE/g sample when compared to static spent (71.71 mg GAE/ g sample) while its mycelia had 59.21 mg GAE/g sample. Mycochemical screening revealed that both mycelial mats contain varying amount of mycochemicals such as flavonoids, tannins,

alkaloids and steroids, essential oils, fatty acids, coumarines, phenols, and anthraquinones. Saponins, terpenoids, and cardiac glycosides were not detected in both samples.

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