CENTRAL LUZON STATE UNIVERSITY

MYCELIAL GROWTH PERFORMANCE AND ANTIBACTERIAL ACTIVITIES OF SELECTED CENTRAL LUZON STRAINS OF *Monascus purpureus* (Went, 1895)

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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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ABSTRACT

PRIMERO, RAFF EMIL 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. **MYCELIAL GROWTH PERFORMANCE AND ANTIBACTERIAL ACTIVITIES OF SELECTED CENTRAL LUZON STRAINS OF *Monascus purpureus* (Went, 1895)**

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Monascus purpureus or angkak is red mold rice commonly used as a natural food colorant for meat and fish in most Southeast Asian countries. In the Philippines, particularly in Nueva Ecija province, *M. purpureus* is commonly added as a coloring agent for traditional fermented rice and fish or *buro* to enhance its aroma. In this study, there were twenty-four different strains of *M. purpureus* collected in the local public markets of Nueva Ecija, San Ildefonso, Bulacan and Balanga City, Bataan. The mycelial growth performance of different strains of *M. purpureus* was evaluated using rice bran decoction gelatin as culture medium. Comparative mycelial growth was done within 15 days of incubation. Results revealed that Balanga, Licab, Rizal and Sto. Domingo Strain showed the fastest growth with 90 mm mean mycelial diameter after 12 days of incubation. *In vitro* bio-assay using immobilized fungal disc of different strains were assessed for their ability to inhibit the growth of *Escherichia coli* and *Staphylococcus aureus*. *M. purpureus* produced antibacterial activities through the formation of zone of

inhibition. Ten *M. purpureus* strains possessed inhibitory activities against both *E. coli* and *S. aureus*, including Bongabon, Cuyapo, Gapan, General Natividad, Guimba, Muñoz, Peñaranda San Antonio, Sta. Rosa and Talavera Strain. Seven strains exhibit activity against *E. coli* only which include Balanga, Cabanatuan, Cabiao, Jaen, Quezon, San Ildefonso and Sto. Domingo strain. In addition, strains that inhibit *S. aureus* only were Lupao, Rizal and San Jose. Four strains namely Aliaga, Licab, San Isidro and Zaragoza did not show any antibacterial activity against the two test bacteria.

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Appendix A. Overview of Central Luzon

https://3ccentralluzon.wordpress.com/2014/10/17/central-luzon-map/
http://ww12.evis.net.ph/
http://www.nscb.gov.ph/activestats/psgc/regview.asp?region=03
http://www.nscb.gov.ph/activestats/psgc/articles/intro_EO103.asp