FUNCTIONAL ACTIVITIES AND IMMUNOSTIMULATING POTENTIAL OF RED SEAWEEDS METHANOL EXTRACT ON NILE TILAPIA AGAINST *Aeromonas hydrophila*

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ACCEPTANCE SHEET

This undergraduate thesis entitled "**FUNCTIONAL ACTIVITIES AND IMMUNOSTIMULATING POTENTIAL OF RED SEAWEEDS METHANOL EXTRACT ON NILE TILAPIA AGAINST *Aeromonas hydrophila***" prepared and submitted by **JHOMELYN V. ABELENDE**, in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN BIOLOGY (ZOOLOGY)**, is hereby accepted.

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BIOGRAPHICAL SKETCH

The author's is from Poblacion, San Antonio, Nueva Ecija, named Jhomelyn Villafuerte Abelende. She is the youngest daughter among the two children of Mr. Jovito L. Abelende and Mrs. Imelda V. Abelende. The author was born on the 3rd day of April 1998. Year 2004, the author started her formula education in Sta. Isabel Montessori School at Sto. Cristo, San Antonio, Nueva Ecija. She finished her primary education on year 2010 and graduated with honors. After primary education, she continued her secondary education in Holy Rosary Colleges Foundation, Calaba, San Isidro, Nueva Ecija. On year 2014, the author finished her secondary education.

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ABSTRACT

ABELENDE, JHOMELYN V., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **JUNE 2018, FUNCTIONAL ACTIVITIES AND IMMMUNOSTIMULATING ACTIVITY OF RED SEAWEEDS METHANOL EXTRACT ON NILE TILAPIA AGAINST *Aeromonas hydrophila***

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Aquaculture practices harbor some bacterial infection, and one of the most common fish pathogens encountered by fisherfolks is *Aeromonas hydrophila*. Immunostimulants are currently used as an alternative to the drugs, chemicals and antibiotics to normal fish diseases because in contrast to vaccines, they enhance the innate immune response. The findings of the study revealed that extract of *Kappapychus alvarezii* contains alkaloids, terpenoids, steroids, flavonoids and quinones whereas, extract of *Gracilaria* spp. contains terpenoids and coumarin, and extract of *Galaxaura oblongata* contains alkaloids and terpenoids. *K. alvarezii, Gracilaria spp.,* and *G. oblongata* showed a zone of inhibition of 7.29mm, 7.17, mm and 7.80 mm respectively. Moreover, *K. alvarezii, Gracilaria spp.*, and *G. oblongata* had 36.73%, 30.50%, and 24.46% radical scavenging activity. The result of the in-vitro assay revealed that it affect the haematological parameters by means of normalizing the RBC, hematocrit and hemoglobin, and increasing the production of white blood cell acting as defense mechanism. Furthermore, it reduced the symptoms exhibited by *A. hydrophila,* lowered the mortality and showed higher percentage of survival excluding for the extract of *Gracilaria* spp. which had moderate survival and mortality. Generally, the extract of *K. alvarezii, Gracilaria* spp, and *G. oblongata* were efficient to use as immunostimulant for nile tilapia infected with *A. hydrophila.*

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