



CENTRAL LUZON STATE UNIVERSITY



**EVALUATION OF BACTERIAL BLIGHT RESISTANCE IN MARKER
ASSISTED SELECTION (MAS) - BRED RICE LINES AGAINST
PHILIPPINES ISOLATES OF *Xanthomonas oryzae* pv. *oryzae***

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An Undergraduate Thesis Presented to the Faculty of the Department of
Biological Sciences, College of Arts and Sciences, Central Luzon
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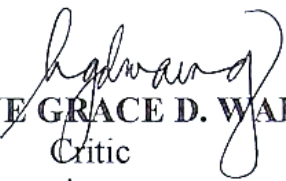


APPROVAL SHEET

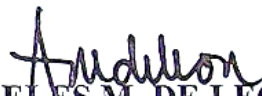
The Undergraduate Thesis entitled: **EVALUATION OF BACTERIAL BLIGHT RESISTANCE IN MARKER ASSISTED SELECTION - BRED RICE LINES AGAINST PHILIPPINES ISOLATES OF *Xanthomonas oryzae* pv. *oryzae*** was prepared by **RONEL T. AGUILAR JR.**, in partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN BIOLOGY is hereby approved and accepted.


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*“Commit your works to the Lord and your plans will be established.”
-Proverbs 16:3*

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ABSTRACT

AGUILAR, RONEL JR. T., Bachelor of Science in Biology, Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, May 2016. **EVALUATION OF BACTERIAL BLIGHT RESISTANCE IN MARKER-ASSISTED SELECTION (MAS)-BRED RICE LINES AGAINST PHILIPPINE ISOLATES OF *Xanthomonas oryzae* pv. *oryzae***

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Among rice diseases, bacterial blight (BB) was named as one of the most destructive causing yield losses ranging from 74-81% in severe condition (Srinivasan and Gnanamanickam, 2005). *Xanthomonas oryzae* pv. *oryzae* (*Xoo*), the causative agent of BB is a gram-negative bacterial pathogen infecting the xylem of the rice, causing lesions and eventually leading to plant death (Liu et al., 2006). One of the major goals of rice improvement programs has been to develop rice cultivars with stable BB resistance. Through Marker-Assisted Selection (MAS), rice breeders in the Philippine Rice Research Institute (PhilRice) had generated several elite lines introgressed with 2-4 BB resistance genes in various combinations. In this study, thirteen promising MAS-bred rice lines were evaluated for reactions to BB using three most virulent *Xoo* races (*Pxo-99*, *Pxo-79* and *Pxo-347*) under controlled conditions. The absorbance at 600 nanometer (\dot{A}_{600}) of each inoculum suspension used was adjusted to 2.0 using UV-VIS spectrophotometer. IR24 and IRBB64 were used as susceptible and resistant checks, respectively. Data



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