

**IDENTIFICATION AND EVALUATION OF ANTAGONISTIC FUNGAL
EPIPHYTES AGAINST THE RICE BLAST PATHOGEN**
(Magnaporthe oryzae B. Couch)

DONN LUIGI SEBASTIAN CASTRO

An undergraduate thesis manuscript presented to the faculty of the College of Agriculture,
Central Luzon State University, Science City of Muñoz, Nueva Ecija
in partial fulfillment of the requirements
for the degree

BACHELOR OF SCIENCE IN AGRICULTURE
(Crop Protection – Plant Pathology)

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by

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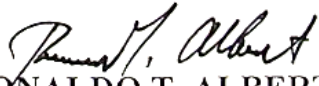
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BIOGRAPHICAL SKETCH

The author was born on the 17th day of April 1997 in the Science City of Muñoz, Nueva Ecija. He is the youngest son among the three children of Mr. Danilo M. Castro and Mrs. Liberty S. Castro. His family depends on business and farming as their source of income.

He finished his elementary education at Maligaya Elementary School and his secondary education at Muñoz National High School in the Science City of Muñoz, Nueva Ecija.

In 2013, he was admitted at the Central Luzon State University and took up Bachelor of Science in Agriculture. With the influence of his teachers and having an interest and curiosity in plant diseases, he majored in Crop Protection specializing in Plant Pathology.

He is an active member of the Pest Management Society and was the president of the society for the school year 2016- 2017.

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ABSTRACT

This study aimed to determine the antagonistic fungal epiphytes as potential biological control agents against the rice blast pathogen (*Magnaporthe oryzae* B. Couch) through *in vitro* culture. The fungal epiphytes were also characterized morphologically for identification of genera.

There were 66 fungal epiphytes isolated from different rice varieties collected in different municipalities of Nueva Ecija: Cabanatuan City, Palayan City, General Tinio, Peñaranda, Guimba, Cuyapo, Talugtug and Lupao with rice varieties NSIC RC 132H, NSIC RC 132H, NSIC- Rc 222, NSIC- Rc 218, NSIC- Rc 152, NSIC Rc 222, PSB- Rc 130 and GSR- 12, respectively. Eleven (11) epiphytic fungal isolates were selected as potential biological control agents that inhibit the growth of *M. oryzae*.

The top most promising fungal epiphytes were *Mucor* sp. CaT4 with percent inhibition of 67.36%, followed by *Mucor* sp. LB2 (62.69%), *Penicillium* sp. CaT1 (37.33 %), *Aspergillus* sp. LM1 (33.68 %), *Fusarium* sp. CuB1 (33.15 %), *Curvularia* sp. GT4 (32.46 %), *Curvularia* sp. CaM7 (31.91 %), *Fusarium* sp. CuM2 (28.91 %), *Curvularia* sp. LM2 (28.49 %), *Curvularia* sp. LT2 (28.08 %) and *Fusarium* sp. GtM2 (26.29 %) with the least inhibitory activity.

All epiphytic fungal isolates were properly characterized morphologically (colony and micro structure). These were then identified at the genus level.

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