

INDUCTION OF RESISTANT RESPONSE OF RICE (*Oryza sativa* L.) AGAINST SHEATH BLIGHT (*Rhizoctonia solani* Kuhn) THROUGH PACLOBUTRAZOL AND SODIUM SILICATE APPLICATION

LAWRENCE BONITA PARAISO

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

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by

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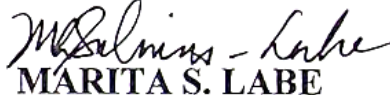

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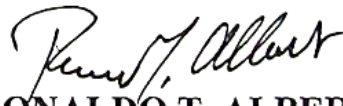

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BIOGRAPHICAL SKETCH

The researcher, LAWRENCE BONITA PARAISO, was born on August 04, 1996 at Malolos City, Bulacan. He is the third child of Mr. and Mrs. Herminio and Haydeliza Paraiso.

He finished his elementary education as salutatorian at Look 2nd Elementary School on 2009. In secondary, he specialized in Computer Technology and graduated on 2013 at Guiguinto National High School as valedictorian. He also obtained his NC II in Computer Hardware Servicing at TESDA the same year.

On 2013, he entered Central Luzon State University with the degree of Bachelor of Science in Agriculture. On 2015, he graduated with High Honors at Central Luzon State University for his Agricultural Science Certificate. During his third year in college he chose to specialize in the field of plant pathology. A scholarship grant was awarded to him by IRRI-LBP (Gawad Patnubay Scholarship Program). He is an active member of Pest Management Society (PMS) for two years.

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INDUCTION OF RESISTANT RESPONSE OF RICE (*Oryza sativa* L.) AGAINST SHEATH BLIGHT (*Rhizoctonia solani* Kuhn) THROUGH PACLOBUTRAZOL AND SODIUM SILICATE APPLICATION¹

ABSTRACT

The study was conducted to evaluate the capability of paclobutrazol (PBZ), sodium silicate (SS), and their combination (PBZ + SS) in inducing resistant response of rice against sheath blight (*Rhizoctonia solani* Kuhn). *In vitro* and *in vivo* tests were conducted through food poisoning method and pot experiment, respectively. Ingression of the fungus was also observed.

Results of the experimentation showed that PBZ can slow the growth of the fungus on food poisoning method. However, neither PBZ nor SS had suppressed the growth of the fungus until four days. On the other hand, plants treated with PBZ attained longer incubation period for the appearance of the first symptoms, higher percent protection and lower disease incidence and severity when compared to plants treated with SS. Consequently, all PBZ treated plants had resulted to grains that were abortive. Moreover, ingression of the fungus on PBZ treated plants showed that the formation of infection structures was delayed or absent. While in the SS treated plants, infection structures was not observed. However, hyphae observed gained entrance on the stomata of the plant. In general, this study proves the promising capability of PBZ and SS in inducing resistant response of rice against sheath blight. However, due to the formation of abortive grains, mode of application of PBZ should be given importance and further study is recommended to assess the capability of the two test chemicals.

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