



**CENTRAL LUZON STATE UNIVERSITY**



**EVALUATION OF COMBINED USE OF *Trichoderma* AND *Bacillus* AS  
POTENTIAL BIOCONTROL OF SOUTHERN BLIGHT ON TOMATO**

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An Undergraduate Thesis Submitted to the Faculty of the Department of  
Biological Sciences, College of Arts and Sciences, Central Luzon  
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Requirements for the Degree

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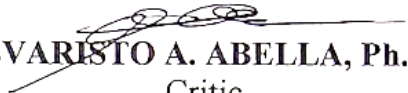
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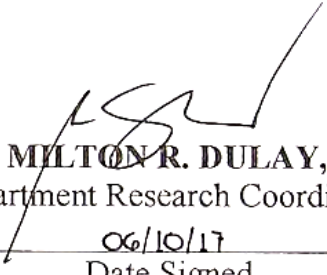
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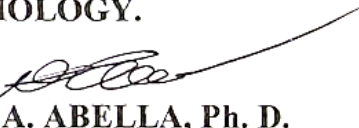
The undergraduate thesis entitled: **EVALUATION OF COMBINED USE OF *Trichoderma* AND *Bacillus* AS POTENTIAL BIOCONTROL OF SOUTHERN BLIGHT ON TOMATO** prepared and submitted by **NOEMI CABANATAN RAMILO** in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN BIOLOGY** is hereby approved and accepted.


  
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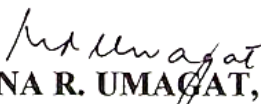
  
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## ABSTRACT

**RAMILO, NOEMI C.**, Bachelor of Science in Biology, Department of Biological Sciences, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines. June 2017. **EVALUATION OF COMBINED USE OF *Trichoderma* AND *Bacillus* AS POTENTIAL BIOCONTROL OF SOUTHERN BLIGHT ON TOMATO.**

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A combination of two biological control agents, *Trichoderma* sp. and *Bacillus subtilis* were tested in *in vitro* against *Sclerotium rolfsii* as potential control for Southern blight in *Lycopersicon esculentum* Miller. Radial growth of the mycelium of *S. rolfsii* was inhibited by *Trichoderma* sp. in dual petri plate assay which may be attributed to fast colonization of the mycelia as well as the production of spores. Microscopic studies showed the hyphae of *S. rolfsii* surrounded by *Trichoderma* sp. with subsequent disintegration. Antagonistic activity of *Trichoderma* sp. was demonstrated by coiling and suppressing the production of sclerotia which limits its activity *in vitro*. However, the antagonism of *B. subtilis* against *S. rolfsii* was not observed on dual petri plate assay. Microscopic studies confirmed lack of evidences as shown in the absence of hyphal interference of *B. subtilis* against *S. rolfsii* *in vitro*.

*Trichoderma* sp. and *B. subtilis* were subjected to pathogenicity test to determine their antagonistic activity against *S. rolfsii* on screen house setting. Culture suspension of *Trichoderma* sp. and *B. subtilis* were obtained and sprayed on a 150-day old *L.*



*esculentum* Miller plant. Test plants in negative control exhibited symptoms of Southern blight approximately after 5 days. Reduced symptoms were exhibited on the test plants treated with *Trichoderma* sp. and *B. subtilis*. The progression of symptoms slowed down, which needs further testing in screenhouse/field testing.



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