CENTRAL LUZON STATE UNIVERSITY

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

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NOEMI CABANATAN RAMILO

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDIX TABLE

LIST OF APPENDIX FIGURES

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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