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CONTROL OF PYTHIUM SP. AND PHYTOPHTHORA SP.
INFECTING PAPAYA SEEDLINGS USING
TRICHODERMA ACTIVATED
COMPOST (TAC)

THESIS

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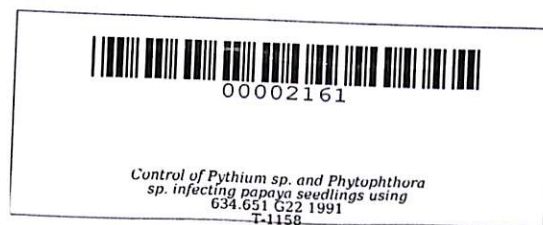
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CONTROL OF PYTHIUM SP. AND PHYTOPHTHORA SP. INFECTING
PAPAYA SEEDLINGS USING TRICHODERMA
ACTIVATED COMPOST (TAC)

A Thesis

Submitted to the Faculty of the
Don Severino Agricultural College
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(Major in Crop Protection)



by

MARITES NUESTRO GATDULA

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A B S T R A C T

GATDULA, MARITES NUESTRO, "Control of Pythium sp. and Phytophthora sp. Infecting Papaya Seedlings Using Trichoderma Activated Compost (TAC)".

The effectiveness of Trichoderma activated compost (TAC) in protecting papaya seedlings from Pythium and Phytophthora infection under greenhouse condition was determined. Moreover, the antagonistic activity of two species of Trichoderma on Pythium and Phytophthora under laboratory condition was also determined.

Incorporating TAC to the soil at levels of 50g, 100g, 150g, 200g, and 250g was found effective to suppress infection by inoculated Pythium aphanidermatum, Pythium sp. (local isolate) and Phytophthora parasitica in papaya seedlings under greenhouse condition. Although insignificant, the germination of papaya seeds were found to be highest at 50g TAC and 100g TAC and lowest of 0g, 150g, 200 g, and 250g TAC. This is explained by the presence of pathogens at 0g TAC and soil acidity with increased level of organic matter (150g - 250g TAC).

Under laboratory condition, the Trichoderma harzianum and Trichoderma koningii were most antagonistic to colonies of Pythium aphanidermatum and Pythium sp. (local isolate). However, mycelial growth of these two Pythium isolates were inhibited most by Trichoderma koningii

especially after a bright yellow pigment, it produced diffused into the medium. The colony diameter of most pathogen cultures were gradually reduced while some were totally eliminated. The two species of Trichoderma also attempted to antagonize colonies of *P. parasitica*, however, the latter may seem to withstand the invasion of the former. Nevertheless, the aerial mycelia of P. parasitica was reduced by Trichoderma.

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CONTROL OF PYTHIUM SP. AND PHYTOPHTHORA SP. INFECTING
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ACTIVATED COMPOST (TAC)^{1/}

by

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^{1/}An Undergraduate Thesis presented to the Faculty of the Department of Biological Sciences, Don Severino Agricultural College, Indang, Cavite, in partial fulfillment of the requirements for the degree of Bachelor of Science in Agriculture (BSA), major in Crop Protection. Prepared under the supervision and guidance of Miss Luz B. Montesclaros. Contribution No. CP-91003-002.

INTRODUCTION

Papaya (Carica papaya, L.) is one of the most important fruits in the Philippines available throughout the year. It has become a popular industry item for several reasons. The ripe fruits which are excellent source of vitamins and minerals are eaten fresh. It can also be used in the preparation of fruit salads and various canned, dried, dehydrated, candied, frozen and pureed products as well as for making sugar concentrates.

Papaya green fruits, on the other hand, are pickled or cooked as vegetable. These are also source of papain, an enzyme which breaks protein. Papain is used in the preparation of food beverages and animal feed, vaccines