THE EFFECT OF DIFFERENT PLANT EXTRACTS ON *Pyricularia oryzae* IN-VITRO

MUHAMAD AZIM BIN ABDUL AZIZ

Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Technology and Plantation Management
in the Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA

JANUARY 2018

ACKNOWLEDGEMENT

First and foremost, all praise to Allah SWT the benevolent for His guidance, mercifulness, and gracefulness for giving me strength, capability, and inspiration to embark on this research, complete, and submit my final year project which is entitled "The Effect of Different Plant Extracts on *Pyricularia oryzae* In-vitro". This final year project report is prepared in partial fulfillment of the requirements for the degree of Bachelor of Science (Hons.) Technology and Plantation Management in the Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA Melaka, Jasin Campus. This writing of final year project has been one of the most important academic challenges that I have ever to face along my study. I may have not been able to complete this research without the assistance and cooperation of my supervisor, co-supervisors, family, lab assistants, and my beloved friends.

First of all, I would like to wish my deepest appreciation to my supervisor Mrs. Intan Sakinah binti Mohd Anuar for the outstanding attitudes, patience, and providing me guideline for doing my research on this final year. Highly appreciated to my co-supervisors, Mrs. Nurul Wahida binti Ramli for providing a lot of time in completing my research study, Dr. Hamzah bin Abdul Aziz, and Mr. Mohd Zafri bin Ab Wahab for teaching me an extra knowledge and information that have not been taught in classes.

Moreover, I am also thankfulness for my family, friends, and lab assistants that always gave me support in term of prayer, motivation, guidance, and encouragement in order to finish this final year project. Sincere thanks to all my research's friends and classmates for their time, knowledge, and guidance to me along my study. Finally, my gratefulness for those directly and indirectly contributed in this research study but not mention above, I am really appreciated for your kindness and moral support because it is meant a lot for me. Thank you very much for your cooperation and patience.

MUHAMAD AZIM BIN ABDUL AZIZ

TABLE OF CONTENTS

ABSTRACT

THE EFFECT OF DIFFERENT PLANTS EXTRACT ON *Pyricularia oryzae* IN-VITRO

A research has been made about the antifungal attributes of some plant extracts against *Pyricularia oryzae*. Rice blast caused by *P. oryzae* is one of the most decimate diseases of rice and number of yield loss up to 100% in susceptible cultivars of rice. It can cause major symptoms including lesions that can be found on all parts of the plant such as in leaves, leaf collars, necks, panicles, pedicels, and seeds. There is no study of these 4 plant extracts conducted in-vitro. The objectives of this study are to isolate, inoculate, and characterize the causal agent of rice blast disease from Merlimau rice field in Melaka and to determine the effectiveness of different types of plant extracts as well as Kapal Terbang leaf (*Chromolaena odorata*), Papaya leaf (*Carica papaya*), Neem leaf (*Azadirachta indica*), and Lidah Buaya leaf (*Aloe vera*) against *P. oryzae* in-vitro. Antifungal activity will be tested at concentrations of 0%, 25%, 50%, and 100% of plant extracts by using dual culture method. The main results of this experiment which are the ability of these plant extracts to control blast disease in Malaysia with minimal inhibitory concentration (MIC) preferred as an alternative to chemical control and it can serve as bio-fungicides for farmers in Malaysia.

Keywords: *Pyricularia oryzae,* isolate, effectiveness, *Chromolaena odorata, Carica papaya, Azadirachta indica, Aloe vera,* concentrations, potatoes dextrose agar (PDA), bio-fungicides.