THE EFFECTIVENESS OR *TRICHODERMA* SPP. ON PADDY PRODUCTIONS; A REVIEW

NORRAHILAH BINTI AHMAD

FINAL YEAR PROJECT REPORT SUBMITTED IN PARTIAL REQUIREMENTS FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE (HONS.) PLANTATION TECHNOLOGY AND MANAGEMENT IN THE FACULTY OF PLANTATION AND AGROTECHNOLOGY UNIVERSITY TECHNOLOGY MARA

JULY 2016

DECLARATION

This Final Year Project is a partial fulfilment of the requirements for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

It is entirely my own work and has not been submitted to any other University or higher education institution, or for any other academic award in this University. Where use has been made of the work of other people it has been fully acknowledged and fully referenced.

I hereby assign all and every rights in the copyright to this Work to the Universiti Teknologi MARA ("UiTM"), which henceforth shall be the owner of copyright in this Work and that, any reproduction or use in any form or by any means whatsoever is prohibited without a written consent of UiTM.

Candidate's signature:	?
I hereby declare that I have checked this project and in my opinion, this project adequate in terms of scope and quality for the award of the degree of Bachelor Science (Hons.) Plantation Technology and Management, Faculty of Plantation Agrotechnology, Universiti Teknologi MARA.	r of
Signature: Name of Supervisor: Position: Date:	

ACKNOWLEDGEMENTS

I would first like to thank my supervisor, Miss Hamizah binti Othman for their patient guidance, enthusiastic encouragement and useful critiques of my final project and also keeping my progress on schedule. She consistently allowed this paper to be my own work, but steered me in the right the direction whenever she thought I needed it.

I would also like to thank the experts who were involved in my final year project, Dr. Zaiton binti Sapak who explains detail on my writing. Without her passionate participation and input, my writing could not have been successfully conducted.

I would also like to acknowledge Madam Noer Hartini binti Dolhaji and also Madam Wan Zuraida binti Wan Mohd Zain for her advice and assistance in viewing and give some comment on my poster for the presentation and I am gratefully indebted to them very valuable comments on my writing project.

My grateful thanks are also extended to Madam Siti Sarah binti Jumali for reviewing and give marks to my final year project and also to Muhamad Nur Firdaus bin Nordin that give me some advice to keep me to do this project.

Finally, I must express my very profound gratitude to my parents for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of writing this project. This accomplishment would not have been possible without them. Thank you.

NORRAHILAH BINTI AHMAD

TABLE OF CONTENTS

TABI LIST LIST LIST ABST	NOWLEDGEMENTS LE OF CONTENTS OF FIGURES OF TABLES OF ABBREVIATIONS TRACT	Page iii iv v vi vii viii ix
1	 INTRODUCTION 1.1 Background 1.2 Characteristic of <i>Trichoderma</i> spp. 1.3 Objective of study 	1 4 5
2	TRICHODERMA SPP. ACTS AS A BIOLOGICAL CONTROL 2.1 Background 2.1.1 Bypolaris oryzae (Brown spot disease) 2.1.2 Sarocladium oryzae (Sheath rot of disease) 2.1.3 Rhizoctonia solani (Rice blight disease) 2.1.4 Pyricularia oryzae (Rice blast disease)	6 8 10 11 12
3	USES OF <i>TRICHODERMA</i> SPP. 3.1 Uses in Pollution Remediation 3.2 Improves Plant Productivity	15 16
4	 APPLICATION EFFECTS BY USING TRICHODERMA SPP. IN PADDY 4.1 Effects on Development of Paddy 4.2 Increasing The Rate Germination of Seed Rice 4.3 Increasing The Root Length, Dry Weight, Shoot Length and Leaf Area 	18 18 20
5	EFFECYS OF TRICHODERMA ON STRESS ENVIRONMENT 5.1 Effect on Drought Stress	22
6	CONCLUSIONS AND RECOMMENDATIONS	25
	D REFERENCES RICULUM VITAE	26 29

ABSTRACT

THE EFFECTIVENESS OF TRICHODERMA SPP. ON PADDY PRODUCTIONS; A REVIEW

Trichoderma spp. was known as an effective biocontrol agent. The purpose of this study to increase the yield of paddy in ton/ha. Trichoderma spp. functions to reduce the level of disease and also helps the increasing production of paddy. Moreover, the study shows that Trichoderma spp. is a biological control that inhibit target organisms growth by their ability that grow much faster than pathogenic fungi hence competing for nutrient and space. It may affects the development of paddy by increasing the root and shoot in length, increased in plant height, leaf number and tiller number. In the other hand, Trichoderma spp. may help in enhancement of stress environment such in drought condition and also accelerate decomposition of matter. The studied also shown that Trichoderma spp. increases of root surface area due to the application of Trichoderma spp. helps the increase the deep of root in the soil that may increases the water absorption thus reducing the water stress (wilting) and also increasing the nutrient uptake. The most study shown it explain about the role and mechanism of Trichoderma spp. that increasing the paddy productions.