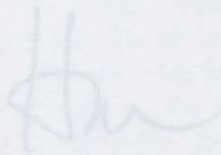


This Final Year Project Report entitled "The Potential of Virgin Coconut Oil (VCO) as Bio-Pesticides to Control *Ganoderma boninense* (Pat.) In Vitro" was submitted in fulfillment of the requirements for the degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, Universiti Teknologi MARA Sabah, and was approved by,



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ACKNOWLEDGEMENTS

First and foremost I would like to thank god for divinely guiding me throughout this research. My heartfelt thanks go to my supervisor, Dr. Hendry Joseph for all of his guidance and continuous support. Your continued support and encouragement has been a source of inspiration. Madam Rozlianah Fitri Said, DPIM lecturer who kindly gave me some of her *Ganoderma boninense* samples, it has been a lifesaver. To my most helpful research partner, Azielia Elastiqah Salamth, thank you for being such a good friends. I would also like to thank all of the laboratory assistants of Kompleks Makmal Sains, Teknologi dan Pertanian (KMSTP) especially Ms. Suhana, Mr. Jemat, Madam Atifah and Ms. Ezza for assisting me during my laboratory work. To all of my friends and colleagues within Bachelor of Science (Hons.) Biology especially Sarah J. Mianus, Stacey Lipang Musa and Hartini Tasek, thank you for the encouragement, you have all contributed in making this journey an enjoyable one. I would also like to thank my dear family for their endless love and for being so patient with me. The constant love, patience and understanding have been my strength throughout this journey. Lastly, I would also like thank to those who were directly or indirectly involved in completing my final year project.

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ABSTRACT

The potential of Virgin Coconut Oil (VCO) as Bio-Pesticides to Control *Ganoderma boninense* (Pat.) *In Vitro*

The availability of fewer antifungal agents with fungicidal actions prompted this present study to investigate the potential of virgin coconut oil as bio-pesticides to control *Ganoderma boninense* (Pat.) *in vitro*. The objectives of the study were to determine the effectiveness of VCO in inhibiting *G. boninense* and to determine VCO effective concentration to suppress growth of *G. boninense*. Isolates of *G. boninense* were obtained and their susceptibility to virgin coconut oil and fungicide with hexaconazole as active ingredient were studied by using dual culture assay test and degradation test. Their effectiveness is determined by determination of Percentage Inhibition of Radial Growth (PIRG). It was found out that each concentration of VCO showed 0% inhibition toward *G. boninense*. The results of this study showed that virgin coconut oil was not able to inhibit growth of *G. boninense* at any concentration *in vitro*. Fungicide with hexaconazole as active ingredient showed increase of PIRG with increasing concentration of fungicide.

CHAPTER 1

INTRODUCTION

Palm oil industry is one of the most important economic activities in Malaysia as the leading producer of palm oil. The industry is still booming in Malaysia. It was labeled as “a golden crop of Malaysia” since it generates a very profitable earnings for the country (Bivi, Farhana, Khairulmazmi & Idris, 2010). At the moment, Malaysia is one of the world’s largest producer and exporter of oil palm (MPOC, 2012). The existence of the basal stem rot (BSR) disease caused by *Ganoderma boninense* has long affected the production of healthy palm oil trees in Malaysia and to date there are no effective cure for the disease.

Studies done by Idris *et al.* (2002) stated that chemical pesticides were strongly inhibitory towards the growth of *G. boninense*. However, the use of chemical pesticides has lead to environmental pollution and possibly the emergence of *G. boninense* new variants that are resistance to chemical pesticides. These explain why most of the recent researches are towards environmentally friendly approach to manage the disease.