

EFFECT OF DIFFERENT TEMPERATURE ON BURNING PEAT SOIL

AMIR NUR RAHIM BIN ABD AZIZ

2012352163

**Final Year Project Report Submitted In
Partial Fulfillment Of The Requirement For The
Degree of Bachelor of Science (Hons.) Plantation Management And Technology
In The Faculty Of Plantation And Agrotechnology
Universiti Teknologi MARA**


AUGUST 2015

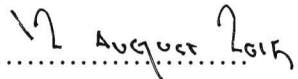
DECLARATION


This Final Year Project is a partial fulfillment 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 acknowledge and fully referenced.


I hereby assign all and every right in the copyright of 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:.....

Date:.....

Name:.....

I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Science (Hons.) Plantation Technology and Management, faculty of Plantation and Agrotechnology, Universiti Teknologi MARA

Signature:.....

Name of supervisor:.....

Koordinator Diploma
Fakulti Perladangan dan Agroteknologi
Universiti Teknologi MARA (Melaka)
Kampus Jasin, 77300 Merlimau
Melaka

Position:.....

Date:.....

ACKNOWLEDGEMENT

In the name of Allah the most almighty to all being especially me in making my research proposal title 'Effect of Different Temperature On Burning Peat Soil' is done successfully. I would like to thank my most appreciation to all the people who have given support and contribution effort in this research proposal.

Foremost, I wish to count my blessings and thanked to Allah S.W.T for providing me with the mental and physical faculties as well as other positive attributes notably perseverance to complete this challenging research paper. Special mention goes to my research advisor madam Salwa Binti Haji Adam for her guidance, supervision and support. Her constructive comments and suggestions greatly assist in the successful completion of this project paper.

I also want to take this opportunity to extend my appreciation to all those who have assisted in one-way or another in completion of this research paper. Sincere thanks to all my friends and colleagues for their understanding, kindness and moral support during the testing time undertook to complete this research. Last but not least, my deepest gratitude to my beloved parents for their unwavering support, invaluable assistance and sincere blessing.

Finally, to all people that help me during research period that provide some important ideas, comment or suggestion whether directly or indirectly. Thank you and hope 'Allah' will bless all of you.

Thank you.

TABLE OF CONTENT

	PAGE
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF FIGURES	vii
LIST OF TABLE	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT	x
CHAPTER 1: INTRODUCTION	
1.0 Introduction	
1.1 Background Of Study	1
1.2 Problem Statement	5
1.3 Research Question	6
1.4 Objective	6
1.5 Hypothesis	
1.5.1 Determination on Nutrient Concentration After Burning Peat Soil	6
1.5.2 Determination on Volume of Peat Soil	6
1.6 Significance Of Study	7
CHAPTER 2: LITERATURE REVIEW	
2.0 Peat Soil	8
2.1 Distribution of Peat in Malaysia	8
2.2 Peat Soil Profile	10
2.3 Definition of the Concept	11
2.4 Map Peat Distribution	12
2.5 Properties of Peat Soil	14
2.5.1 Physical Properties	14

ABSTRACT

Smoldering wildfires propagate slowly through surface of organic layers of the soil and severely affect the soil, producing physical, chemical and biological changes. These effects are caused by the prolonged heating and the large loss of soil mass and chemical properties are documented in the literature. This paper attempts to understand the effect of different temperature on peat soil (without burning, 100⁰c, 200⁰c, 300⁰c, 400⁰c, and 500⁰c) on volume soil loss, nutrient (N, P, K, Mg, Ca, Mn) and pH. 18 samples treatments are test and 3 replication for each temperature. The soil sample obtains at Felcra seri Mendapat and the analysis is done at UiTM Jasin Laboratory. Volume of soil loss is record after burn in Muffle Furnace. In addition, the nutrient analysis tests with ICP-OES (Inductively Couple Plasma-Optical Emission Spectrometry) for each of temperature. In order to analyse the nutrient, the sample were extracted first. For the third test, is performing using pH meter with the appropriate electrode. Volume soil loss, nutrient, and pH showed different response towards different temperature. Peat volumes will be lost since the fire consumed the peat soil. This result decreases the depth of plant soil due to conversion of organic matter to carbon dioxide (CO²). The pH of peat soil also shows the trend of increasing, but in moderate increasing. Finally, the regenerative aspect of different temperature is discussed.