DNA EXTRACTION FROM *Musa* sp. USING CONVENTIONAL METHOD

NUR SYAZNI BINTI SULAIMAN

Final Year Project Report Submitted In Partial Fulfilment of the Requirement for the Degree of Bachelor of Sciences (Hons.) Biology in the Faculty of Applied Sciences Universiti Teknologi MARA

JANUARY 2017

This Final Year Project Report entitled **"DNA Extraction from** *Musa* **sp. Using Conventional Method"** was submitted by Nur Syazni Binti Sulaiman, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

Cik Nur Azimah Binti Osman Supervisor Faculty of Applied Sciences Universiti Teknologi MARA 72000 Kuala Pilah Negeri Sembilan

Ilyanie binti Haji Yaakob Project Coordinator Faculty of Applied Sciences Universiti Teknologi MARA 72000 Kuala Pilah Negeri Sembilan Dr. Nor'aishah binti Abu Shah Head of School of Biology Faculty of Applied Sciences Universiti Teknologi MARA 72000 Kuala Pilah Negeri Sembilan

Date: _____

TABLE OF CONTENTS

Page
iii iv

LIST OF TABLES	vi
LIST OF ABBREVIATIONS	vii
ABSTRACT	viii
ABSTRAK	ix

CHAPTER 1 : INTRODUCTION

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

1.1	Background Study	1
1.2	Problem Statement	3
1.3	Significance of the Study	4
1.4	Objectives of the Study	4

CHAPTER 2 : LITERATURE REVIEW

2.1	The P	lant Cell	5
2.2	Musa	sp.	7
2.3	DNA	Extraction Methods	9
	2.3.1	CTAB (cetyltrimethylammonium bromide) Method	10
	2.3.2	Edward SDS Method	11
	2.3.3	Phenol Choloroform Isoamyl Alcohol Method	12

CHAPTER 3 : METHODOLOGY

3.1	Materials	13
3.1.1	Raw Materials	13
	3.1.2 Chemicals	
	3.1.3 Apparatus	13
3.2	Methods	14
	3.2.1 DNA Extraction method; CTAB buffer method	16
	3.2.2 DNA Extraction method; SDS buffer method	17
	3.2.3 DNA Extraction method; Phenol Chloroform Isoamyl	18
~ ~	alconol	10
3.2	DNA Quantification	19

CHAPTER4 : RESULTS AND DISCUSSION	
4.1 Quantitative Analysis	20
4.1.1 CTAB buffer method, SDS buffer method and Phenol	21
Chloroform Isoamyl Alcohol method	
4.1.2 The Modified CTAB buffer method	23
CHAPTER 5 : CONCLUSIONS AND RECOMMENDATIONS	27
CITED REFERENCES	31

35

CURRICULUM VITAE

ABSTRACT

DNA EXTRACTION FROM Musa sp. USING CONVENTIONAL METHOD

In Malaysia, banana is the second most widely cultivated fruit and about 12% of the total production is exported. Apart from being consumed as a fresh fruit, Musa sp. leaves are used worldwide as cooking material, natural herbs for skin, cosmetic and medicinal used. Extracting DNA mature leaves from plant sample is not an easy approach. The aim of this study is to identify the best conventional method and to compare the concentration and purity of DNA produced by extracting plant DNA from *Musa* sp. Three conventional methods are being used in this study; CTAB buffer method, SDS buffer method and Phenol Chloroform Isoamyl alcohol method. In addition, further study of CTAB buffer method is being done by altering the incubation time of the sample. Results obtained indicate that CTAB buffer method is the best method among all that being study with the ideal incubation time of forty five minutes. CTAB buffer method shows 1.541 of DNA purity compare to SDS buffer method which is 1.292 and Phenol Chloroform Isoamyl with 0.077. Therefore, in extracting mature Musa sp. leaves, the best method to be done is by using CTAB method with incubation time of forty five minutes at 65°C.