

**FABRICATION AND CHARACTERIZATION OF JACKFRUIT
(*ARTOCARPUS HETEROPHYLLUS*) SEED POWDER & SAGO
STARCH BLEND AS BIODEGRADABLE BIOPLASTIC**

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ABSTRACT

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Jackfruit (*Artocarpus Heterophyllus*) is a very common food in Asia and the seed has a very high amylose content quite similar to sago starch. Jackfruit seed and sago are very suitable raw materials to be used in production of biodegradable bioplastic. The objective of this research is to prepare biodegradable bioplastic made from natural resources and to utilize the use of potential waste materials. The plastic was prepared by mixing jackfruit seed flour and sago flour in distilled water with addition of 0.1 M hydrochloric acid (HCl). It was stirred and heated for 80 °C and mixed with glycerol. Then, the mixture was neutralized with 0.1 M sodium hydroxide (NaOH), casted on acrylic plate and dried for several hours. The plastic was tested for its mechanical strength, water absorption, soil burial test and scanned by using Fourier Transform Infrared spectroscopy (FT-IR). The maximum mechanical strength obtained was 2.06 MPa at 70% jackfruit seed powder to sago starch ratio. The decomposition rate of biodegradable plastic was indicated by observing the decrease of the FT-IR peaks intensity and broadening of the wavenumber (cm^{-1}) due to degradation of starch in the bioplastic. Sample with 100% jackfruit seed percentage revealed to degrade fastest compared to other samples.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	ix
ABSTRACT	x
ABSTRAK	xi
CHAPTER 1 INTRODUCTION	
1.1 Background and problem statement	1
1.2 Significance of study	4
1.3 Objectives of study	4
1.4 Scope of work	4
CHAPTER 2 LITERATURE REVIEW	
2.1 Characteristic of jackfruit seed	5
2.2 Sago	7
2.3 Chemical composition of jackfruit seed	8
2.4 Current technology	9
CHAPTER 3 METHODOLOGY	
3.1 Materials	11
3.2 Preparation of starch blend	11
3.3 Plastic preparation	12
3.4 Characterization	16
3.4.1 Mechanical strength test	16
3.4.2 Water absorption test	18
3.4.3 FT-IR	18
3.4.4 Soil burial test	19
CHAPTER 4 RESULTS AND DISCUSSION	
4.1 Physical properties of the samples	20
4.2 Mechanical properties	21
4.3 Water absorption test	23
4.4 FT-IR analysis	25
4.5 Soil burial test	27

CHAPTER 5 CONCLUSION AND RECOMMENDATION	
5.1 Conclusion	32
5.2 Recommendation	33
CITED REFERENCES	34
APPENDICES	36
<i>CURRICULUM VITAE</i>	37

LIST OF FIGURES

FIGURE	CAPTION	PAGE
1.1	Amylose and amylopectin structures	3
2.1	Jackfruit	6
2.2	The jackfruit seed	7
2.3	Sago	8
3.1	Sifting process of jackfruit seed	12
3.2	Different ratio between jackfruit and sago starch	13
3.3	Mixture of jackfruit and sago starch dispersed in distilled water	14
3.4	Heating the mixture and stirred with constant speed	14
3.5	Mixture of thicken jackfruit seed powder and sago starch	15
3.6	ASTM D882 with dimension of 50 mm x 15 mm	17
3.7	Tensile strength testing using Horizontal Tensile Tester	17
4.1	Different percentage of jackfruit seed powder bioplastic	20
4.2	Mechanical strength of JFS powder to SS of different percentage	21
4.3	Average elongation at break of jackfruit seed powder bioplastic	23
4.4	Water absorption of jackfruit seed powder plastic film	24