

**STUDY OF EFFECT AND CHARACTER STARCH WITH BAMBOO
VINEGAR IN MANGO USING COATING**

SHARIFAH ANIS AFIQAH BINTI SYED MOHUSIN

**DEGREE OF BACHELOR OF SCIENCE (Hons.) APPLIED CHEMISTRY
IN THE FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA**

JANUARY 2023

**STUDY OF EFFECT AND CHARACTER STARCH WITH BAMBOO VINEGAR IN
MANGO USING COATING**

SHARIFAH ANIS AFIQAH BINTI SYED MOHUSIN

**FINAL YEAR PROJECT REPORT SUBMITTED IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
DEGREE OF BACHELOR OF SCIENCE (HONS.) APPLIED CHEMISTRY
IN THE FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA**

JANUARY 2023

This Final Year Project Report entitled “ **Study of Effect and Character Starch With Bamboo Vinegar In Mango Using Coating**” was submitted by Sharifah Anis Afiqah binti Syed Mohusin in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in Faculty of Applied Sciences, and was approved by

Mohd Lias Bin Kamal
Supervisor
B. Sc. (Hons.) Applied Chemistry
Faculty of Applied Science
Universiti Teknologi Mara
02600 Arau
Perlis

Dr. Siti Nurlia Binti Ali
Project Coordinator
B. Sc. (Hons.) Applied Chemistry
Faculty of Applied Science
Universiti Teknologi Mara
02600 Arau
Perlis

Dr. Zuliahani Binti Ahmad
Head of Programme
B. Sc. (Hons.) Applied Chemistry
Faculty of Applied Science
Universiti Teknologi Mara
02600 Arau
Perlis

Date: 29th JANUARY 2023

ABSTRACT

STUDY OF EFFECT AND CHARACTER STARCH WITH BAMBOO VINEGAR IN MANGO USING COATING

One of the great potential commercial values is the mango, and it also has the ability to be shipped to other nations. The mango also known as *Mangifera Indica* is a well-known kind of mango that is native to Malaysia. The same is apparent for the Harum Manis mango. This is because its flavour and aroma are completely unique in comparison to those of any other mango. However, the most significant issues regarding mango fruit preservation and shelf life. In this project, an experiment on bamboo vinegar with starch was tested to know the potential in antifungal, the shape, colour, and moisture in mangoes to maintain the freshness of mangoes. The FTIR was used to characterize the properties of the extracted material. In the end, a physical test will be carried out in order to assess the amount of moisture that is contained within the mango, as well as its colour, form, and an observation of the mango skin itself through the use of image pre-processing.

TABLE OF CONTENTS

	Page
ABSTRACT	iv
ABSTRAK	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF SYMBOLS	xi
LIST OF ABBREVIATIONS	xii
CHAPTER 1 INTRODUCTION	
1.1. Background of study	1
1.2. Problem statement	3
1.3. Significances of study	4
1.4. Objectives of study	4
1.5. Scope and limitation of study	5
1.5.1 Scope of study	5
1.5.2 Limitation of the study	5
CHAPTER 2 LITERATURE REVIEW	
2.1. Mango	
2.1.1. The history of mango	6
2.1.2. Texture, appearance, colour, shape, and size	7
2.1.3. Growth and productive phase	8
2.1.4. Disease of mango	10
2.2. Bamboo vinegar	11
2.2.1. Component in bamboo vinegar	12
2.2.2. Benefit of bamboo vinegar	15
2.3. Starch	
2.3.1. Overview of starch	15
CHAPTER 3 METHODOLOGY	
3.1. Materials	26
3.2. Chemical	26
3.3. Instrumentation	26
3.4. Procedures	
3.4.1. Fruit selection	27
3.4.2. Bamboo vinegar	27
3.4.2.1 Extraction of bamboo vinegar	27
3.4.2.2 Extraction of phenol derivatives from bamboo tar	28
3.4.3. Preparation of bamboo vinegar mixed with starch solution	28
3.4.4. Dipping process of mango with bamboo vinegar mixed with starch solution	29