

**A REVIEW ON POMEGRANATE PEEL EXTRACT  
INCORPORATED CHITOSAN BASED POLYMER FOR  
BIODEGRADABLE FOOD PACKAGING**

**NUR SABRINA BINTI NAZERI**

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

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## **ABSTRACT**

### **A REVIEW ON POMEGRANATE PEEL EXTRACT INCORPORATED CHITOSAN BASED POLYMER FOR BIODEGRADABLE FOOD PACKAGING**

The current research presents an in-depth analysis of the effects of adding pomegranate peel extract as a functional component to a variety of edible packaging materials. This review provides an overview of the recent developments and achievements in active edible packaging materials enhanced with pomegranate peel and their useful applications. Recently, improvements have been made to prolong the shelf life of food stuffs and controlled release and transport of nutraceuticals and bioactive compounds by utilizing pomegranate fruit and its underutilized elements. Adding pomegranate peel extract to an edible matrix can increase structural, mechanical, and biochemical properties like antioxidant and phenolic content and antibacterial activity, as well as the peel's compatibility with the matrix. Incorporating pomegranate peel extract into an edible matrix and applying it to food products could also aid in the retardation of natural colors, lipid oxidation, microbiological contamination, and influence the shelf life of food products by preserving their organoleptic properties. On the other hand, additional research is required to investigate the practical consequences that are associated to the influence of pomegranate peel extract on the optical, physical, and barrier properties of edible films and coatings.

## TABLE OF CONTENTS

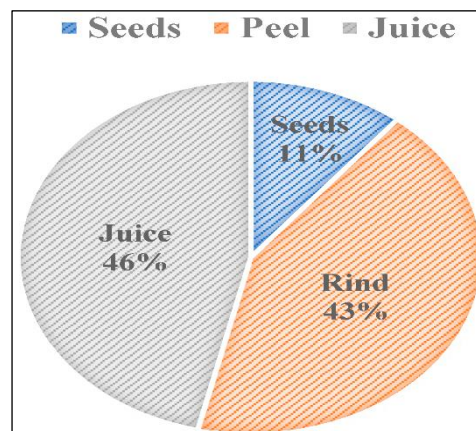
	Page
<b>ABSTRACT</b>	i
<b>ABSTRAK</b>	ii
<b>ACKNOWLEDGEMENT</b>	iii
<b>TABLE OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vi
<b>LIST OF FIGURES</b>	vii
<b>LIST OF ABBREVIATIONS</b>	viii
<b>LIST OF SYMBOLS</b>	ix
<b>CHAPTER INTRODUCTION</b>	
1.1 Background of study	1
1.2 Problem statement	3
1.3 Research questions	3
1.4 Significance of study	4
1.5 Objectives of study	4
1.6 Scope and limitation of study	5
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Pomegranate peel as a valuable source of bioactive components	6
2.2 Chitosan	9
2.3 Properties of edible packaging enriched with pomegranate peel extract	11
2.3.1 Physical and mechanical properties	11
2.3.2 Antimicrobial properties	12
2.3.3 Antioxidant activity of edible film	14
2.4 Characterization technique of pomegranate peel extract incorporated chitosan	15
2.4.1 <i>Fourier-transform infrared spectroscopy</i> (FTIR)	15
2.4.2 Total phenolic content (TPC)	16
2.4.3 Scanning electron microscope (SEM)	17
2.5 Health benefits of pomegranate peel extract	18
2.6 Invention on adding pomegranate	20
2.7 Edible packaging enriched with pomegranate peel extract	21
<b>CHAPTER 3 CONCLUSIONS AND RECOMMENDATION</b>	
3.1 Conclusions	23
3.2 Recommendation	24
<b>CITED REFERENCES</b>	25

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of study

*Punica granatum* L. which known as pomegranate is a famous fruit of a shrub are often found where the environment is suitable for their growth, mostly in west Asia and the Mediterranean region, including America (Pagliarulo *et al.*, 2016). Scientifically, the term for pomegranates is *Punica granatum*, which comes from the Latin words, *Pomum* (apple) and *Granatus* (grainy) means seeded apple. Figure 1.1 shows the weight percentage composition of pomegranate. It is originated in Central Asia, specifically in Persia, Iran, and it spread all around the world (Teixeira da Silva *et al.*, 2013).



**Figure 1.1** Weight percent composition of pomegranate (Ko *et al.*, 2021).