

**UNIVERSITI TEKNOLOGI MARA**

**PROCESSING OF ALGINATE SPHEROIDS**

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## ABSTRACT

The production of alginate spheroids by using extrusion-spheronization method were investigated in this study. The alginate spheroids were formed by using alginate and SW25 as binding liquid. Different amount of SW25 added, amount of time and speeds for spheronization were variables that being measured. Formed spheroids are characterized by two tests such as spheroid strength analysis and spheroid texture analysis. Increased in amount of SW25 added into spheroids resulted in increased in strengths of alginate spheroids. The surface and core textures revealed that the amount of pores decreased as the amount of SW25 increased showing that the addition of larger amount of binder resulted in formation of spheroids with more homogenous textures. Reduction amount of time and speed of spheronization resulted in spheroids with decreased strength initially but latter spheroids increased in strengths. This was due to destruction of spherical structure and reconstruction upon further spheronization.

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Alginate is a linear polysaccharide that is made of two uronic acid monomers; mannuronic (M) and guluronic (G) acids (Panouille' & Larreta, 2008). It can be obtained from brown algae Phaeophyceae as one of the cell wall's components. The polymers may vary widely in composition and monomers sequences and are arranged in a pattern of blocks along the chain (Sriamornsak et al. 2008). These homopolymeric regions of M and G blocks are interspersed with regions of alternating structure (MG blocks). The composition and extent of the sequences and the molecular weight determine the physical properties of alginate.