



Zuraida Ahmad

# SAGO

*(Metroxylon Rottb)*

*And Its Applications*

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# **Sago** **(*Metroxylan Rottb*)** **and Its Applications**

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Editor  
Zuraida Ahmad



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# Chapter 8

## Sago Starch - Nanoclay Biocomposites Film

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**Keywords:** Sago starch, nano clay, biocomposites, montmorillonite, thermoplastic starch, glycerol

**Preview.** In this research sago starch was compounded with nanoclays through a film casting method. An organo-modified clays with varying percentage of plasticizer (glycerols, GC) were used. Amount of clay added and processing conditions were investigated. The starch films were characterized by X-ray diffraction (XRD), thermo-gravimetry, fourier-transform infrared (FT-IR) spectroscopy, and scanning electron microscopy (SEM) for morphological studies. Both XRD and FT-IR spectroscopy showed that glycerol can be intercalated into the clay galleries and that there is a possible conformational change of sago starch in the plasticized sago/starch composites films. Morphological studies via SEM demonstrate clay exfoliation occurred in unplasticized sago starch/clay mixture.

### Introduction

In order to solve the problems generated by plastic waste, many efforts have been done to obtain an environmental friendly material. Most of the researches are focused on replacing of the petro-based plastics by biodegradable materials having similar properties and low in cost [1-3]. Among the natural polymers, starch has been considered as one