UNIVERSITI TEKNOLOGI MARA

SAGO STARCH-BASED EDIBLE FILM WITH ASCORBIC ACID FOR FOOD PACKAGING

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ABSTRACT

This study aimed to analyse and evaluate the effect of the addictive of ascorbic acid(AA) on the properties of the produced sago starch-based edible film. Tests were run on the films with and without ascorbic acid to determine the mechanical strength, thickness, solubility of films, antioxidant activity and color. The higher concentration of AA in sago starch film shows the higher solubility compared to film without AA. It was also shown the decreasing in tensile strength and increasing in elongation on film. The water vapor permeability of films with the AA concentration was lowest. Besides, the concentration of AA in films affect antioxidant activity as it has higher percentage of radical scavenging activity (98.5%) meanwhile the colour of the film with AA is yellowish as the degradation of AA presence in film.

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INTRODUCTION

1.1 RESEARCH BACKGROUND

Production of plastic resources has established a rapidly growth for more than 50 years in the world. It is predictable that these materials production increase to 300 million tons. *(Piñer os-Hernandez et al 2017)* Plastic is one of the main material that used for food packaging over a years. Thus, there are likely have waste disposal problems because of the usage of more plastics that are not readily biodegradable and lead to microbial deprivation, petroleum-derived plastic accumulates in the environment. *(Yoon, 2014)*. Besides, natural polymeric materials such as fossil fuel also have been used as food packaging same as plastic. Unfortunately, these fossil fuels are non-renewable and most of them non-biodegradable. *(Otoni et al., 2017)*.

In recent years, edible films have received significant attention because of edible packaging materials over synthetic films advantages. *(Bourtoom, 2008)* Though the