

SYNTHESIS OF FILM BASED CELLULOSE AS FOOD PACKAGING

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ABSTRACT

The aim of this research is to know the character of cellulose film with the addition of glycerol and cinnamon oil and PEG 400 and fennel oil based on mechanic properties, surface photo, and water resistance test and its ability as food packaging

The method used is casting method and coating method. The casting method uses a 5% HCl solution for cellulose hydrolysis. The process of drying cellulose film with casting method is at 60oC for 5 hours. Comparison of glycerol and cinnamon oil concentrations and PEG 400 and fennel oils used in the manufacture of cellulose films by coating method is 3: 1; 5: 1; 7: 1; and 10: 1. The synthesized cellulose film was characterized using tensile strength, optical microscope, FTIR-ATR, water resistance, and film effectiveness.

The results showed that the best concentration of glycerol and cinnamon oil was 3: 1 with elongation value 21,3843%, modulus of young 66,4602 MPa, water resistance 38,86%, most homogeneous surface photo, and best film effectivity . Characteristics of cellulose film with the addition of PEG 400 and the best fennel oil are on cellulose film PEG 400-fennel oil 7: 1, with tensile strength value 25,2311 Mpa, elongation 13,9351%, water resistance 27,45%, a dense and homogeneous surface.

Kata Kunci: *Film cellulose, coating method, clove oil, mechanic properties*