

ABSTRAK

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Effect of Carboxymethyl Cellulose (CMC) as Biopolymers to The Edible Film Sorghum Starch Hydrophobicity Characteristics

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Abstract. The use of synthetic plastic should be limited because it causes the plastic waste that can not be decomposed quickly, triggering environmental problems. The solution of the plastic usage is the use of biodegradable plastic as packaging which is environmentally friendly. Synthesis of edible film can be done with a variety of components. The component mixture of starch and cellulose derivative products are one of the methods for making edible film. Sorghum is a species of cereal crops containing starch amounted to 80.42%, where the use of sorghum in Indonesia merely fodder. Therefore, sorghum is a potential material to be used as a source of starch synthesis edible film. This research aims to study the characteristics of edible starch films Sorghum and assess the effect of CMC (Carboxymethyl Cellulose) as additional materials on the characteristics of biopolymers edible film produced sorghum starch. This study is started with the production of sorghum starch, then the film synthesizing with addition of CMC (5,10, 15, 20, and 25% w/w starch), and finally the hydrophobicity characteristics test (water uptake test and water solubility test). The addition of CMC will decrease the percentage of water absorption to the film with lowest level of 65.8% in the degree of CMC in 25% (w/w starch). The addition of CMC also influences the water solubility of film, where in the degree of 25% CMC (w/w starch) the solubility of water was the lowest, which was 28.2% TSM.