

ABSTRACT

Meilidya Falkhiya Azzahra. 24020220140047. **Effect of Addition of Chitosan and Glycerol Variations on the Bioplastic Characteristics from Hanjeli Starch (*Coix lacryma-jobi* L).** Under the guidance of Wijanarka and Endang Kusdiyantini.

The increasing use of plastic as packaging can cause problems for the environment. Bioplastic made from hanjeli starch is one alternative solution to reduce environmental problems caused by plastic waste because it is easily biodegradable. This study aims to determine the effect of adding chitosan and glycerol on the characteristics of hanjeli tears starch bioplastic. The research was conducted by producing hanjeli starch bioplastics using a Factorial Completely Randomized Design with the factors of chitosan K1, K2, K3 (2, 3, 4 grams), and glycerol G1, G2, G3 (3, 5, 7 mL) with three repetitions (U1, U2, U3). The characteristics observed included thickness, water resistance, biodegradation, tensile strength, elongation, and FTIR analysis. The results were analyzed using Two-Way ANOVA, and the test values were compared with standard bioplastic values. Based on the research findings, the resulting bioplastic had a translucent white color, slightly rough texture, and an acidic smell. The characteristics of the bioplastic obtained included thickness ranging from 0.24 to 0.38 mm, water resistance of 140.7% to 266.7%, biodegradation of 18.49% to 54.9%, tensile strength of 0.02 to 2.54 MPa, and elongation of 4% to 18.57%. FTIR spectrum analysis showed the presence of functional groups such as O-H/N-H, C-H, C=O, C-N, and C-O.

Keywords: bioplastic, glycerol, hanjeli, chitosan