

## ABSTRAK

Bioplastik merupakan plastik yang dapat terurai oleh aktivitas mikroorganisme menjadi senyawa yang lebih sederhana setelah terbuang ke lingkungan. Bioplastik pada penelitian ini terbuat dari selulosa ampas tebu, pati singkong, dan kitosan kulit udang dengan penambahan *plasticizer* gliserol. Penelitian untuk mengetahui pengaruh penambahan kitosan kulit udang terhadap karakteristik bioplastik yang dihasilkan. Bioplastik dibuat dengan variasi penambahan kitosan yaitu 0; 0,5; 1; dan 1,5 gram. Hasil penelitian menunjukkan pengaruh penambahan kitosan terhadap bioplastik cenderung meningkatkan nilai ketebalan, kadar air, densitas, dan ketahanan air, namun menurunkan nilai kuat tarik dan memperlambat proses biodegradasi. Hasil penelitian menunjukkan bahwa bioplastik yang terbaik untuk sifat ketebalan, densitas, kadar air, ketahanan air, dan biodegradasi pada penambahan 1,5 gram kitosan dengan nilai berturut-turut sebesar 0,238 mm; 0,9555; 9,4829; 88,5105; dan 94,6119%. Uji biodegradasi pada penelitian ini menghasilkan nilai yang sudah baik karena sudah sesuai standar ASTM yaitu terdegradasi lebih dari 50% dalam waktu 10 hari.

Kata kunci: ampas tebu, bioplastik, gliserol, kitosan, selulosa.



## ABSTRACT

Bioplastics are plastics that can be decomposed by the activity of microorganisms into simpler compounds after being discharged into the environment. The bioplastics in this study were made from bagasse cellulose, cassava starch, and shrimp shells chitosan with the addition of glycerol plasticizer. Research determined the effect of the addition of shrimp shell chitosan on the characteristics of the resulting bioplastics. Bioplastics were made with variations of the addition of chitosan 0; 0.5; 1; and 1.5 grams. The results showed that the effect of adding chitosan on bioplastics was that they tended to increase thickness, moisture content, density, and water resistance, but decreases tensile strength and slows down the biodegradation process. The results showed that the best bioplastics for thickness, density, moisture content, water resistance, and biodegradation properties were the addition of 1.5 grams of chitosan with a value of 0.238 mm; 0.9555; 9.4829; 88.5105; and 94.6119%. The biodegradation test in this study resulted in a good value because it complied with ASTM standards, namely degraded more than 50% within 10 days.

Keywords: bagasse, bioplastics, glycerol, chitosan, cellulose.

