ABSTRAK

Bioplastik merupakan plastik yang yang dapat digunakan layaknya seperti plastik konvensional, namun akan hancur terurai oleh aktivitas mikroorganisme menjadi air dan karbondioksida setelah habis terpakai dan dibuang ke lingkungan. Bioplastik pada penelitian ini terbuat dari bahan dasar komposit pati kulit singkong dan kitosan kulit udang dengan penambahan *plasticizer* sorbitol. Penelitian ini bertujuan mengetahui pengaruh penambahan *plasticizer* sorbitol 0; 30; 45; dan 60% terhadap karakteristik bioplastik yang dihasilkan. Bioplastik pada penelitian ini dibuat dengan menggunakan metode *blending*. Hasil penelitian menunjukkan pengaruh penambahan *plasticizer* sorbitol terhadap bioplastik yaitu cenderung akan memperbesar nilai ketebalan, kadar air, kelarutan dalam air, elongasi, dan mempercepat proses biodegradasi bioplastik, namun cenderung akan memperkecil nilai ketahanan air dan kuat tarik bioplastik. Hasil penelitian terbaik bioplastik dari komposit pati kulit singkong dan kitosan yaitu pada penambahan *plasticizer* sorbitol 60% dengan nilai ketebalan 0,243 mm; ketahanan air 70,52%; kadar air 15,38%; kelarutan dalam air 28,12%; kuat tarik 3,405 MPa; elongasi 17,5%; dan persentase penurunan berat 100% yang sudah terdegradasi sempurna selama 7 hari.

Kata kunci: Bioplastik, pati kulit singkong, kitosan kulit udang, sorbitol.

ABSTRACT

Bioplastics are plastics that can be used like conventional plastics, but will be degradable by the activity of microorganisms into water and carbon dioxide after being used up and discharged into the environment. The bioplastic in this research was made from a composite of cassava peel starch and shrimp skin chitosan with the addition of the sorbitol plasticizer. The purpose of this research was to determined the effect of adding plasticizer sorbitol 0; 30; 45; and 60% of the resulting bioplastic characteristics. The bioplastics in this research were made using the blending method. The results showed that the addition of sorbitol plasticizer to bioplastics was tended to increased the value of thickness, moisture content, water solubility, elongation, and accelerate the biodegradation process of bioplastics, but tended to reduced the value of water resistance and tensile strength of bioplastics. The best research results of bioplastics from cassava peel starch and chitosan composites were the addition of 60% sorbitol plasticizer with a thickness value of 0.243 mm; water resistance 70.52%; water content 15.38%; solubility in water 28.12%; tensile strength 3.405 MPa; elongation 17.5%; and the percentage of weight loss 100% which has been completely degradable for 7 days.

Keywords: Bioplastic, cassava peel starch, shrimp shell chitosan, sorbitol.