ABSTRACT

PREPARATION AND CHARACTERIZATION OF PLASTIC MIXTURE OF FLOUR TAPIoca STARCH AND LDPE USING SINGLEs CREW EXTRUDER

By

LAILATULHASANAH

The green material plastic made from starch of tapioca flour and Low Density Polietilen (LDPE) using a single screw extruder was conducted. The mixture of Plastic film Low Density Polyethylene (LDPE) and thermoplastic starch (PTP) has been carried out by varying the composition of thermoplastic starch 0%, 1%, 5%, and 10% of the number of samples used as much as 50 grams of the thermoplastic starch composition contains glycerol and distilled water. The results show that the plastic produced are slightly more rigid due to the addition of thermoplastic starch to the LDPE. Plastic characterization was performed using DSC and TGA instrument. DSC and TGA thermogram showed that the addition of the LDPE and irregularities PTP-LDPE mixture had no effect on the shift of the melting point (Tm) but the effect on the Tg and the rate of decomposition of plastics. A little shifting wavenumber in the FTIR spectrum indicates that the PTP and LDPE was mixed.

Keyword: Starch, LDPE, Differential Scanning Calorymetry (DSC), Thermal Gravimetry Analyser (TGA)