PUTRA-PLAST: Biodegradable Polymer from Recycled Plastic

Charun, Vanisa

A recycled polyolefin based polymer, low density polyethylene (LDPE) was used to produce a biodegradable polymer in this. Spear grass and pumpkin seed was used as a pro-oxidant. The plastic films were exposed to natural weathering for six months. The susceptibility of the plastic film, based on its tensile properties, morphology, and physical changes was measured every three months. The tensile strength and elongation at break (Eb) of the blends with pro-oxidant were more susceptible compared to the blends without pro-oxidant. During weathering, weight loss increased with the addition of pro-oxidant in the blends, however molecular weight reduced. The increase of weight loss and different in susceptibility after natural weathering refers to the degradation of polymer. Keywords: LDPE, spear grass, pumpkin seed, tensile strength, morphological properties

Awards Won: