

The influences of soil burial assessment on linear low-density polyethylene/ *Cyperus odoratus* biocomposite

Abstract

The potential of *Cyperus Odoratus* (CY) as a filler was studied. In powder form, CY was mixed with linear low density polyethylene (LLDPE), prior to being fed into a twin screw extruder and subsequently into an injection moulding machine to produce LLDPE/CY biocomposite dumbbell specimens. LLDPE/CY biocomposites with composition ratios of 5% to 20 wt% were studied. The natural soil burial of LLDPE/CY biocomposites were carried out for 1 year and the samples were collected and measured after 3, 6, and 12 months for degradability tests, by means of tensile tests and morphological study. Within the 1-year exposure to soil burial test, the tensile strength and Eb of the composites decreased, while their Young's modulus increased. The presence of CY filler in the composites significantly accelerated the degradation of the LLDPE/CY biocomposites.