

Effect of triacetin on tensile properties of oil palm empty fruit bunch fiber-reinforced polylactic acid composites.

ABSTRACT

The effects of triacetin as a plasticizer on the tensile properties and morphology of oil palm empty fruit bunch (EFB) fiber-reinforced polylactic acid (PLA) composites were studied. In this research, pulverized oil palm EFB fiber size from 0.25–0.50 mm were weighted with different fiber loadings and mixed with 5% triacetin. The obtained results indicated that the tensile strength and the Young's modulus of PLA/EFB composites with the addition of triacetin were enhanced at an 80% PLA and 20% EFB fiber loading. The interfacial properties between PLA and the EFB fiber were improved after the addition of triacetin.

Keyword: Bio-composites; Fiber-reinforced; Interfacial property; Oil palm empty fruit bunch; Oil palm empty fruit bunches; Poly lactic acid; Triacetin; Young's Modulus.