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Composite of immature coir fibers and starch/EVOH/glycerol blends

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Unripe coconut fibers were used as fillers in a biodegradable polymer matrix of starch/Ethylene vinyl alcohol (EVOH)/glycerol. The effects of fiber content on the mechanical and thermal properties were evaluated. The addition of coconut fiber into starch/EVOH/glycerol blends reduced the ductile behavior of the matrix by making the composites more brittle. At low fiber content, blends were more flexible, with higher tensile strength than at higher fiber levels. The temperature at the maximum degradation rate slightly shifted to lower values as fiber content increased. Comparing blends with and without fibers, there was no drastic change in melt temperature of the matrix with increase of fiber content, indicating that fibers did not lead to significant changes in crystalline structure.

Key words: coir fiber, starch, biocomposites, EVOH

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