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Effect of treatments applied to sugar cane bagasse used as reinforcement in thermoplastic starch composites

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ABSTRACT
The aim of this work was to evaluate the effect of treatments applied to sugar cane bagasse used as reinforcement of composites from natural polymers, to improve their properties. The composites were prepared using corn and cassava starch, thermoplasticized with glycerin. The reinforcement consisted of mechanically depithed bagasse, and fibers obtained by organosolv delignification and soda-anthraquinone delignification. Standardized test specimens were prepared from the thermoplastic starch and the composites to determine their tensile mechanical properties, dynamic-mechanical analysis in tensile mode, moisture absorption and X-ray diffraction. Bagasse fibers (10 wt%) increased the tensile strength from 18 to 46% respect the polymeric matrices, and increased it 4-fold compared to starch matrices.. The use these reinforcements have a potential application in the development of composites from natural matrices.