Abstract

The effect of anatomical features and functional properties of fillers on the twigs of apple and cotton stalks, wood plastic composites of HDPE and wood flour were studied. The anatomical tissue filler biometric properties were investigated. Fillers biometric characteristics include: type of fiber, fiber lumen diameter, cell wall thickness and vascular valves measure and its impact on the physical and mechanical properties of wood-polymer composites were observed. Variables in this study include the type of lignocellulosic material in two levels) branches of apple and cotton stalks (and percentage of lignocellulosic material in the composite in three levels (45, 60 and 75% by weight), respectively. The coupling agent maleic anhydride polyethylene to rate fixed 3% by weight based on polymer phase was used in combination with all treatments. in order to provide treatments, a mixture of wood flour, HDPE, coupling and different levels of weight ratios specified type and amount of lignocellulosic material in the extruder under a temperature of 160 ° C and was mixed at 70 rpm. in accordance with ASTM test samples for testing the mechanical properties (modulus and flexural strength, modulus and tensile strength and impact resistance) and physical (water absorption and thickness swelling) were made by injection molding machine. lignocellulosic material impact resistance decreased. The water absorption and thickness swelling of the composites increased with increasing amount of lignocellulosic material.

Keyword: Wood-Plastic, HDPE, Apple Branches, Cotton Stalks.

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The effect of anatomical features and content of fillers apple branches and stems of cotton on the functional properties of wood-plastic composites.

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