Abstract

The possibility of making fiber board with medium density fiberboard (MDF) from bagasse fibers using natural glue: lignin liquor and blood powder was investigated in this study. Lignin bagasse, blood powder, sulfuric acid glyoxal and phenol-formaldehyde were used with various proportions to make 21 different treatment. In this study, bagasse fibers and lignin liquor was used as glue for making boards. In all of boards for all treatment, temperature was 190 centigrade degree, time of press was 15 minutes, temperature of press was 190 centigrade degree, and gluing amount was 20 percent. Physical traits (swollen diameter (TS) and water absorption (WA) after 24 hours floating in water) and mechanical resistances (Inner Viscosity (IB) and board's hardness and static bending including flexural modulu (MOR) and elasticity modulu (MOE)) was examined and analyzed using a completely random statistical method. Also obtained averages analyzed using Duncan Test. According to the obtained results, water absorption and board's swollen diameter increased with adding blood powder, and decreased with adding sulfuric acid. Also experimental results showed that flexural and elasticity modulus and inner viscosity and board's hardness in boards with lignin and blood powder is low, and the maximum amount of MOR, MOE, IB, and hardness belongs to those boards with high level of phenol-formaldehyde. Also inner viscosity in boards with lignin and blood powder has minimum of inner viscosity, and the maximum amount belong to those boards with high phenol-formaldehyde. For hardness test, boards with lignin and blood powder have minimum resistance and boards with high level of phenol-formaldehyde have maximum hardness. So regarding the results of tests, the effect of studied variables on physical and mechanical traits was confidentially 95 % meaningful and all the resistances gained European standards. Therefore, making wooden compressed sheets is possible using wastages.

Key Words: Blood Powder, Bagasse Fibers, Lignin Liquor, Glyoxal, MDF

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