Variante de investigare şi testare a gradului de biodegradare a unor materiale compozite celoligninice

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This work has the purpose of emphasizing some methods of studying and testing the biodegradation of some lignocellulose composite structures represented by some fir and beech test pieces. The test pieces made of fir wood have the size (7.5x3.0x1.5) cm and a relative equilibrium humidity Ur=13.63%, those made of beech wood have the size (8.5x4.3x1.5) cm and a relative equilibrium humidity Ur=14.74%. They were used both in their natural state (the reference sample) and chemically treated, in which case they have undergone a treatment of impregnation. The treatment has been carried out through impregnation by brushing in both ways. There were used 5 chemical bioprotecting substances (biocides). These chemical substances were used in different concentrations (1%, 3%, and 5%) and they are both organic and inorganic. Therefore, the treatment of the wooden test pieces was achieved with unmodified/modified straw lignin rendered soluble in ammonia solution 0.1 N, furan resin dissolved in distilled water, copper chloride and copper ammonia solution. Before c1arrying out the treatment, the test pieces made of fir and beech wood have been weighed with a precision of 0.01g. After carrying out the impregnation and after drying at atmospheric humidity, the test pieces made of fir and beech wood have undergone once again the process of weighing in order to establish the mass of the test pieces after the application of the chemical treatment. As a result of this undertaking, both the treated and the untreated (reference samples) test pieces made of fir and beech wood have undergone various tests of biodegradability. The process of biodegradation was analyzed from the point of view of several ways of testing it. Their choice was made starting from the standard biological risk classes with regard to the biological attack. The testing of the level of biodegradation and implicitly the level of bio- protection was achieved in various environments, namely: in indoor environment (laboratory conditions), in outdoor environment (outside the laboratory), in soil (in the absence of plants) and in soil in the presence of the bean plants,(the Vera breed). As a result of these tests there could be noticed that the treatment applied on the surface of the woody material is effective (the highest level of biodegradability is registered at the reference samples).