

ZMENY POLYSACHARIDOV PRI TERMICKEJ DEGRADÁCII SMREKOVÉHO DREVA

ALTERATIONS OF POLYSACCHARIDES IN THE PROCESS OF SPRUCE WOOD THERMAL DEGRADATION

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ABSTRACT

In this paper there are described the alterations of spruce wood polysaccharides at the thermal degradation at the fire loading up to temperature of 310°C. The main objective was to compare various methods for polysaccharide determination in thermally treated wood. The obtained results show the changes in the polysaccharidic part of wood (holocellulose, cellulose and hemicelluloses). The polysaccharides portion is degraded by influence of increasing temperature; however cellulose yields are different in the dependence of method determination (α -cellulose, Kürschner-Hoffer cellulose, Seifert cellulose).

At the thermal degradation mainly hemicelluloses are degraded; cellulose is more stabile polysaccharide. The alterations are influenced by the conditions of the thermal loading.

Key words: spruce, thermal loading, cellulose, polysaccharides.

SUMMARY

In the paper there are used the samples of spruce wood *Picea abies* [L.] Karst. after the one-side thermal loading during 90 min in accordance with the standardised temperature curves PAR1, PAR2 and NTK. The thermally loaded samples were separated into layers with different temperature ranges. In the separated layers were polysaccharides by various methods determined. From the experimental results we can conclude that at the thermal degradation of spruce wood changes in the polysaccharidic part of wood (holocellulose, cellulose and hemicelluloses) take place. The polysaccharides portion is degraded by influence of increasing temperature; however cellulose yields are different in the dependence of method determination (α -cellulose, Kürschner-Hoffer cellulose, Seifert cellulose). At the thermal degradation mainly hemicelluloses are degraded; cellulose is more stabile polysaccharide. The alterations are influenced by the conditions of the thermal loading.

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