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Časopisi po područjima
Prirodne znanosti
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Humanističke znanosti

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Prijava novog časopisa



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Izvorni znanstveni članak

Biological durability of wood modified by citric acid

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Sažetak

This paper presents the results of measurement of durability of beech wood (*Fagus sylvatica*) modified by Citric Acid (CA) against brown rot fungus *Poria placenta* according to EN 113. Modification was performed

by impregnation with 7.0% CA and 6.5% sodium-hypophosphite (SHP) water solution and 10-hour curing at 140 °C. The influence of thermal treatment on durability was also researched. Weight percentage gain (WPG) caused by modification, moisture content (MC) and mass loss of wood (dm) after fungal nutrition were measured. WPG of modified beech wood was 6.1% and that of thermally treated wood was -0.3%. The results showed increased durability of modified wood to be 8.3 times greater than nonmodified, while thermal treatment did not give significant durability improvement. These results indicate modification by CA as a promising alternative, but further research on optimisation of modification parameters is needed to achieve improvement of wood properties.

Ključne riječi

chemical modification of wood; esterification; citric acid; biological durability; *Poria placenta*; beechwood

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