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Influence of size reduction treatments on sugar recovery from Norway spruce for butanol production

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Abstract:

This study investigated whether the effectiveness of pretreatment is limited by a size reduction of Norway spruce wood in biobutanol production. The spruce was milled, chipped, and mashed for hydrogen peroxide-acetic acid (HPAC) and dilute acid (DA) pretreatment. Sugar recoveries from chipped and mashed spruce after enzymatic hydrolysis were higher than from milled spruce, and the recoveries were not correlated with the spruce fiber length. HPAC pretreatment resulted in almost 100% glucose and 88% total reducing sugars recoveries from chipped spruce, which were apparently higher than DA pretreatment, demonstrating greater effectiveness of

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