
Characterization of fungal strains for bioethanol production and sugar utilization

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ABSTRACT:

Bioethanol production from cellulose based sources is currently in focus in several research projects and the need of the hour is a versatile fermenting organism that can utilize both 5C and 6C sugars effectively. Several naturally occurring fungi have the property of fermenting both types of sugars more efficiently than the traditionally used *Saccharomyces cerevisiae* which only can ferment hexose sugars. In this study, six different fungi were grown on a media with sugar concentrations similar to the spent sulphite liquor (SSL) from the paper pulp industry. Known fungi such as *S. cerevisiae* and *T. versicolor* as well as 4 unidentified wood rot species were grown in sealed bottles with media containing mixture of 6C and 5C. Comparison was made between ethanol fermentation, sugar consumption and enzyme activities (ALDH and PDC). The fermentation experiment was run for 21 days and ethanol concentrations up to 18g/L were achieved. We conclude that two of the fungi produce sufficient amount of ethanol and could be used in large-scale fermentation processes.