

Inhibitory effect of lignocellulosic hydrolysates on ethanol production by *Pichia stipitis*

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We investigated the cell growth and ethanol production by *Pichia stipitis* KCCM 12009 in the presence of inhibitory materials as model compounds (organic acids, furans and phenolics), and bioethanol was produced by fermentation of lignocellulosic hydrolysates. In the case of model compounds, relative cell growth rate and relative ethanol production rate decreased to 20% - 80%. When initial concentration of acetate were from 1 g/L to 10 g/L. Cell growth and ethanol production were initiated at the minimum 12 hr behind the reference culture when 1 g/L - 5 g/L of furan were added. Phenolics showed a significant effect on strain, the concentration over 3 g/L of phenolics, it caused no ethanol production and no cell growth. In the case of yellow poplar (hard wood) hydrolysates contained 7.1 g/L of acetate, it showed no ethanol production. In the case of waste wood, plywood, particle board and medium density fiber hydrolysates contained 0.3 g/L - 3.0 g/L of acetate, ethanol production yield were 76.5%.