Fuel ethanol production from wet oxidised corn stover by S. cerevisiae

In order to find out appropriate process for ethanol production from corn stover, wet oxidation (195°C, 15 minutes) and simultaneous saccharification and fermentation (SSF) was carried out to produce ethanol. The results showed that the cellulose recovery of 92.9% and the hemicellulose recovery of 74.6% were obtained after pretreatment. 86.5% of cellulose was remained in the solid cake. After 24h hydrolysis at 50°C using cellulase (Cellubrix L), the achieved conversion of cellulose to glucose was 64.8%. Ethanol production was evaluated from dried solid cake and the hydrolysate was employed as liquid fraction. After 142 h of SSF with substrate concentration of 8% (W/V), ethanol yield of 73.1 % of the theoretical based on glucose in the raw material was obtained by S. cerevisiae (ordinary baker’ yeast). The corresponding ethanol concentration and volumetric productivity were 17.2g/L and 0.121g/L.h respectively. The estimated total ethanol production was 257.7 kg/ton raw material by assuming consumption of both C-6 and C-5. No obvious inhibition effect occurred during SSF. These instructions give you the basic guidelines for preparing papers for WCICA/IEEE conference proceedings. © (2012) Trans Tech Publications, Switzerland.

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