Estimation of cellulosic bioethanol production yield from sorghum aud sudan hybrid

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The ethanol productions yield was evaluated by simultaneous saccharification and fermentation (SSF) for the development of bioethanol production techniques using sodium hydroxide pretreated hybrid sorghum sudan grass. Composition analysis was performed for selection of variety to efficiently produce bioethanol on 14 varieties of hybrid sorghum sudan grass. The content of cellulose, hemicellulose, lignin and ash of these varieties was 32~39%, 19~24%, 17~22% and 6~11%, respectively. Among these varieties, 4 varieties of hybrid sorghum sudan grass were selected for the evaluation of ethanol yield and those were pretreated with 1M NaOH solutionat at 150℃ for 30minutes using high temperature explosion system. Pretreated samples contained 52~57% of cellulose. SSF fermentation was carried out for 48hours at 33℃ by Saccharomyces cerevisiae CHY1011 using Green star variety which celluose content was the highest. The ethanol yield was 92.4% and ethanol productions yield was estimated 6200 L/ha.