

COMPLETE SACCHARIFICATION AND FERMENTATION OF WHEAT STRAW AND RICE HULLS TO ETHANOL

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We have demonstrated that wheat straw pretreated with alkaline peroxide can be enzymatically saccharified to fermentable sugars completely. No common fermentation inhibitors are produced. Both separate hydrolysis and fermentation, and simultaneous saccharification and fermentation approaches work equally well for production of ethanol from the alkaline peroxide pretreated wheat straw by a recombinant bacterium capable of producing ethanol from multiple sugars. We have attained similar success with rice hulls. In addition, we can recover silica efficiently from rice hulls. The work will greatly contribute to the development of an integrated bioprocess technology for fuel ethanol production from lignocellulosic feedstock.

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