

Effect of Dilute Acid Pretreatment on Empty Fruit Bunch(EFB) for Bioethanol Production

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Empty fruit bunch (EFB), a residual product of the palm plantation, is an attractive biomass for biorefinery. EFB generated from palm oil production is a huge source of cellulosic material and represents a cheap renewable feedstock which awaits further commercial exploitation.

In this study, dilute acid pretreatment on EFB was applied to obtain high xylan recovery and enzymatic digestibility. The effects of Acid(H₂SO₄) concentration, reaction temperature, and time on xylan recovery and lignin removal were examined. The effects of each pretreatment condition on enzymatic hydrolysis were also observed. The optimum conditions for EFB were 0.8% H₂SO₄, 170°C, and 4 min 19 s. Under these conditions, xylan recovery was 88.8% and enzymatic digestibility was 80.4%.