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**Hydrazine hydrate and organosolv synergetic pretreatment of corn stover to enhance enzymatic saccharification and co-production of high-quality antioxidant lignin**

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**Abstract:**

Hydrazine hydrate and organosolv synergetic pretreatment of corn stover was developed. With the aid of alkaline and reductive hydrazine hydrate, a high delignification rate (77.94%) and total sugar yield of 90.27% (96.60% glucose, 78.82% xylose) based on the pulp could be obtained using hydrazine hydrate (10 mmol/g corn stover) and aqueous ethanol (60 vt%) as the solvent system. Analysis techniques such as FT-IR, SEM, XRD, and NMR were employed to characterize the structure and property changes of stock before and after pretreatment to evaluate the effect of hydrazine hydrate. A mechanism is proposed for the presented system.

Keywords: corn stover; lignin; pretreatment; hydrazine hydrate; antioxidant

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