Pentose production from continuous-pretreatment process (Extruder type) of corn stover biomass pretreated with a soaking in aqueous ammonia

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Hemicelluloses, the second most abundant polysaccharide in nature, are well suited for pentose production due to their enormous availability, low cost and environmental benign process. Corn stover contains 25~30% hemicelluloses and could serve as the ideal feedstock for pentose production. We conducted the pretreatment of corn stover using a SAA and studied its feasibility of hydrolysis for pentose production by continuous-pretreatment process (Extruder type). We demonstrated that the continuous-pretreatment process were capable of efficiently hydrolysis the derived from the ammonia-pretreated (SAA) corn stover. Results demonstrate an ability to achieve high pentose yields (>70%) and concentration (>20g/L) over a range of pretreatment conditions, with performance showing dependence on temperature or acid concentration.