

Sugar Platform: Market Target Case

Dilute Acid Prehydrolysis with Enzymatic Hydrolysis

Minimum Sugar Selling Price:

5.6¢/lb (2000\$)

Annual Production:

992,000,000 lb

Sugar Yield: **1,285 lb/dry ton**

Minimum Ethanol Selling Price

(MESP): **\$1.07/gal** (2000\$)

Annual Production:

69,000,000 gal

Ethanol Yield: **90 gal/dry ton**

Corn Stover

2,000 dry metric ton/day

\$30/dry ton

(33.4¢ per gal ethanol)

Dilute Acid Prehydrolysis

- 90% conversion of hemicellulose to monomers
- 190°C
- 1.1% Acid
- 2 min. residence time
- 30% solids

- No sugar losses in conditioning

Enzymatic Saccharification

- Enzyme purchase price
 - \$0.10/gal ethanol per model
 - \$0.14/gal per metric
- 90% cellulose to glucose conversion
- 20% effective solids

Co-Fermentation

- 95% glucose to ethanol yield
- 85% xylose to ethanol yield
- 85% arabinose to ethanol yield
- 85% galactose to ethanol yield
- 85% mannose to ethanol yield
- 3% contamination loss

Design Case reported in Aden, et al design report (NREL/TP-510-32438)

(considered for the 2005 budget request but was not used)

Contact: Kelly Ibsen (303) 384-6855