

Title Enzymatic dry grind corn process using a new enzyme
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Abstract

A new low temperature liquefaction and saccharification enzyme (GA2) was used in enzymatic dry grind corn process (E-Mill). E-Mill process was compared with conventional dry grind corn process using GA2 with same process parameters. Sugar, ethanol, glycerol and organic acid profiles and coproducts yields were investigated. Differences were observed in glucose profiles for the two processes. Final ethanol concentration of E-Mill process was 15.5% (v/v) which was 9.2% higher than conventional process. Fermentation rate was also higher for E-mill process. Ethanol yields of E-Mill and conventional processes were 2.8 and 2.9 gal/bushel, respectively. Three additional coproducts, germ 8.0% (db), pericarp fiber 7.7% (db) and endosperm fiber 5.2% (db) were produced in addition of DDGS with the E-Mill process. DDGS generated from the E-Mill process was 66% less than the conventional process.