Biomass to Biofuel: Production Enzymes

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The purpose of this experiment was to indicate which enzymes and blends of enzymes extracted the most glucose from switch grass in ethanol production. Results were recorded on a spreadsheet data base. The results showed the influence of various enzymes on switchgrass biomass, and which enzyme extracted the greatest amount glucose from switchgrass to ferment into useable ethanol biofuel. Switchgrass was studied with the selected enzymes of Alpha-Amylase, Cellulase, Hemicellulase, Glucoamylase, Xylanase, and Creative Enzymes Blend for Alcohol GCE to determine which enzymes had the greatest potential to create an efficient ethanol product in equal comparative terms to the industrial production of ethanol. Glucose values were recorded with glucose reagent strips for urinalysis and a blood glucose meter. The experimentation showed that alpha-amylase, glucoamylase, and cellulase extracted the most glucose individually. Blend 1 which was a combination of alpha-amylase, glucamylase, and cellulase produced the most glucose from the samples.

Awards Won: