

## BIOPROCESS OPTIMIZATION IN LEADING CELLULOSIC FEEDSTOCKS MISCANTHUS AND SWITCHGRASS FOR BIOETHANOL PRODUCTION

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**Abstract:** Enzymes cost and feedback loading are the two important factors that determine the process efficiency of cellulosic ethanol production. While increased enzyme concentration results in enhanced sugar releases, cost of the enzyme makes the process expensive. While increased substrate results in enhanced sugar, it will reduce the fermentation process by interfering in mass transfer rates of oxygen and heat. Developing an optimal concentration of enzyme and feedstock will assist in enhancing the process efficiency. *Miscanthus giganteus* and switchgrass (*Panicum virgatum*) are emerging as potential feedstocks for production of biofuels production. The overall objective of the present study was to develop an ideal enzyme and biomass using loading concentrations for saachrification and fermentation using acid pretreated feedstock. Response Surface Method (RSM) was employed for process optimization.

**Key Words:** Enzymes, fermentation, saachrification

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