Characteristics of SSF by SAA Pretreatment from Rice Straw

장서윤, 박용철, 김준석*
경기대학교
(jskim84@kgu.ac.kr*)

In the manufacturing process of lignocellulosic bioethanol pretreatment is necessarily needed but it raises costs of process. The development of pretreatment process has been needed. In this research, SAA(Soaking in Aqueous Ammonia) was chosen as pretreatment due to the simple method and low cost. Rice straw of which the production is outstandingly high in domestic agriculture residuals was chosen as raw material. SAA pretreatment was conducted from 3hr to 72 hr in various time. The enzymatic hydrolysis and SSF(Simultaneous Saccharification and Fermentation) were performed at 20, 30, 40 and 50 ℃ to investigate characteristics of SSF according to pretreatment effects that were enzyme dosage, relation of enzymatic hydrolysis, temperature, fermentation time and reaction rate. As a result, this SAA of rice straw took possibility to bioethanol production in lower temperature conditions than its conventional SSF. And SAA shortened fermentation time for increasing the initial hydrolysis rate.