

Optimization of Pretreatment and Enzymatic Hydrolysis of Spent Coffee Ground for the Production of Fermentable Sugar

Abstract

The aim of this work was to optimize the condition of pretreatment and enzymatic hydrolysis for high yield of sugar production of spent coffee ground (SCG). Acid and alkaline pretreatment method were compared and the method with more sugar produced was selected. Response surface methodology was use for the analysis of conditions such as concentration of alkali, temperature and weight of SCG. The optimized condition obtained was 0.5% (v/v) of alkali, temperature of 100°C and 5% (w/v) of SCG. Enzymatic hydrolysis was carried out after the optimized condition of alkaline pretreatment. The conditions were pH, temperature and enzyme dosage. The optimized condition obtained was at pH 4.8, 0.01 ml of enzyme and temperature of 55°C.