

Synergy Effect of Effective Microorganisms on Cellulose Degradation

오하나, 김영준¹, 구윤모*
인하대학교; ¹인하대학교, 초정밀분리센터
(ymkoo@inha.ac.kr*)

Cellulases have many industrial applications. *Trichoderma reesei* have been widely used in the fermentation industry to become the principal source of cellulase enzymes and other metabolites. *Trichoderma reesei* Rut C-30 produces high levels of endo- β -1,4 glucanase and exo- β -1,4-glucanase. Cellulase production of *Trichoderma reesei* Rut C-30 with various initial concentrations of cellulase-producing EM was investigated. The compositions of culture medium and condition are: Avicel 10g/l, Wheat Bran 50g/l, $(\text{NH}_4)_2\text{SO}_4$ 2.0g/l, Proteose Peptone 3.0g/l, Yeast Extract 0.5g/l, KH_2PO_4 4.0g/l, $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ 0.3g/l, $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$ 0.3g/l, Tween-80 0.2ml/l, and incubated at 28°C with 200rpm in shaking incubator for 12 hours. And the initial pH is 5.5. The carboxymethyl cellulose (CMC) activities and filter paper (FP) activities were determined according to the method of the International Union of Pure and Applied Chemistry (IUPAC). The amount of reducing sugar liberated was determined by the dinitrosalicylic acid method. One unit enzyme activity was defined as the amount releasing 1 μmol reducing sugar per minute. The addition of EM and EM filtrate made the cellulase activities increased in the early phase of *T.reesei* growth.