Production of mannan-degrading enzymes from Aspergillus niger and Sclerotium rolfsii using palm kernel cake as carbon source.

ABSTRACT

The aim of this study is to produce and profile the mannan-degrading enzymes from local fungal isolates by submerged fermentation and saccharification of PKC. Results showed that Aspergillus niger and Sclerotium rolfsii can produce mannan-degrading enzymes. The fungi were grown in submerged fermentation of PKC to produce mannan-degrading enzymes. The highest alpha-galactosidase was obtained on day 13 of fermentation (0.128 U mL⁻¹) when using A. niger and on day 18 (0.126 U mL⁻¹) when using S. rolfsii. Analysis also showed that enzyme activities for beta-mannanase using S. rolfsii were the highest at day 17 (3.166 U mL⁻¹) and for A. niger (2.482 U mL⁻¹) at day 8. Meanwhile the highest beta-mannosidase were obtained at day 16 for A. niger (0.128 U mL⁻¹) and for S. rolfsii at day 16 (0.116 U mL⁻¹).

Keyword: Mannan-degrading enzymes; Aspergillus niger; Sclerotium rolfsii; Palm kernel cake (PKC); Carbon source.