Production od Xylo-oligosaccharider Using Comcob Substrate by Trametes versicolor LHI Static Culure

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ABSTRACT

The white-rot fungi Trametes versicolor LH1 belongs to the basidomycetes class of fungi and is used to degrade celluloses and hemicelluloses. Trametes versicolor LH1 can produce bioactive ingredients and secrete hemicelluloses enzymes such as: xylanase, laccase and manganese peroxidase. Xylooligsaccharides contain two to seven molecules of xylose have been widely used in the food industry. We monitored the effect on the production of xylooligosaccharides in different inoculua and initial pH using corncob substrates by employing Trametes versicolor LH1 static cultures. The results were optimal in 10% of the inocula where the production biomass, extracellular polysaccharides (EPS) and xylanase were 10.57mg/ml, 1.04mg/ml and 58.25U/100ml, respectively. The optimal pH level was found to be pH5 in different initial pH levels (pH3-7) where the the production biomass, extracellular polysaccharides (EPS) and xylanase were 13.94mg/ml, 1.46mg/ml, 82.81U/100ml and 52.97 mg/ml, respectively. A nitrogen source of 0.3% was employed in a peanut powder extract with different initial pH levels (pH3-7) and the optimal pH level was found to be pH5 where the production biomass, extracellular polysaccharides (EPS), xylanase and xylooligosaccharide were 19.36mg/ml, 1.64mg/ml, 104.98U/100ml and 109.01mg/ml, respectively. The different initial pH levels were pH5>pH6>pH7>pH4>pH3 in the production of xylooligosaccharides. The different initial pH levels in the production of xylooligosaccharides in a 0.3% peanut powder extract were identical.

Keywords : Trametes versicolor LH1、corncob substrate、xylanase、xylooligosaccharides

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