

PRODUKSI DAN PENENTUAN KONDISI OPTIMUM ENZIM XILANASE *Bacillus amyloliquefaciens* FUKUMOTO PADA SUBSTRAT XILAN JERAMI

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ABSTRACT

The production and determination of optimal condition of xylanase produced by *Bacillus amyloliquefaciens* on rice straw xylan were investigated in this study. The parameters to be observed were optimal conditions of pH, temperature, substrate concentration and incubation time. Xylanase activity was determined by measuring the amount of reducing sugar formed in the enzymatic reaction based on Somogyi Nelson method. Optimal conditions needed for the production of xylanase were at pH 7, temperature 27°C and six days of incubation time. While optimal conditions of xylanase action were reached at pH 8.2, temperature 45°C, substrate concentration 3.5%(w/w) and 15 minutes of incubation time with enzyme activity and enzyme specific activity of 1.285 U/mL and 0.738 U/mg respectively. As a comparison, xylanase was also produced on pure xylan (birchwood), enzyme activity and enzyme specific activity obtained were 2.701 U/mL and 1.658 U/mg respectively. Cellulase content in enzyme produced on rice straw xilan showed the enzyme activity of 0.094 U/mL.

Keywords : xylanase, *Bacillus amyloliquefaciens*, rice straw xilan

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