OPTIMIZATION MEDIUM XYLANASE ENZYME PRODUCTION OF BACTERIA PROBIOTIC LOCAL *Bacillus* sp.

ABSTRACT

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Xylan is a carbon source to the growth media of various types of bacteria producing extracellular xylanase enzyme. Culture isolates of *Bacillus* sp. isolated showed xylanase activity. The purpose of this study was aimed to optimum medium for growing *Bacillus* sp. producing the xylanase. Six factors examined are various enzyme production time: 6 hours, 12 hours, 18, 24 hours and 30 hours, the carbon source: sugarcane bagasse, rice hulls and corn cobs, with the concentration of carbon source: 0%; 0.25%; 0.5%; 0.75%; and 1%, nitrogen sources: ammonium chloride, ammonium sulphate and sodium nitrate, the concentration of nitrogen source: 0%; 0.0875%; 0.175%; 0.263%; and 0.35%, and simple sugars: glucose, lactose, sucrose, and xylose. All types of waste are used as media optimization will be given delignification treatment. Xylanase activity was measured using a spectrophotometer at $\lambda = 575$ nm. The results showed that the optimum medium for the production of xylanase are 12 hours production, corn cobs 0.25% as carbon source, ammonium chloride 0.26% as nitrogen source and the addition of sugar xylose with xylanase activity of 0.2 U/ml.

Keywords: agricultural waste, medium optimization, xylanase, *Bacillus* sp.