Preparasi Mannan dan Mannanase Kasar dari Bungkil Kelapa Sawit

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Abstrak

Mannan is an oligo-saccharide that was used for human health as a prebiotic food and is produced from hydrolysis of palm kernel cake, coconut seed copra and coke waste. Domestically, palm kernel cake and copra utilized for low efficiency metabolized animal feed A t this moment, via glico-science and technology route, these farming waste using mannanase could be degraded to produce functional oligo saccharide such as mannose and manno-oligosaccharide. Around 20-40% of palm kernel cake fibrous from CPO waste consist beta-mannan. In the beginning, palm kernel cake fibrous qualitative and quantitative analysis and mannan preparation was done for the next enzymatic processing (fermentation step). Optimum condition of palm kernel cake residue hydrolysis was 110°C used heating process till 1_5 hour and 2% mass acid catalyst of 150 g/L, palm kernel cake residue solution. Here, hydrolysis 150 g/L substrate solution at 90" C used heating process till 1.5 hour produced 19.1% mass mannan. Hydrolisis using Streptomyces and Saccharopolyspora (strains from B TCC) resulted that both isolates have a potential to produce mannanase and this raw enzyme qualitativlyt capable to hydrolysis palm kernel cake for producing oligo-saccharides. Both isolates produced mannanase which higher specific activity after 24 hour inoculation of palm kernel cake residue solution.