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EVALUATION OF SOME COST EFFECTIVE MATERIALS FOR MICROBIAL MANNANASE PRODUCTION

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Microbial mannanase have become biotechnologically importance since they target the hydrolysis of complex polysaccharides of plant tissues into simple molecules like manno-oligosaccharides and mannoses. They have found application in the food and feed technology, fruit juice clarification, fruit maceration etc. Production of value-added products by using low-cost sources has increasingly come into prominence. It is well known that major nutrients are carbon and nitrogen for a fermentation process. Medium are generally supplied in expensive sources such as corn steep liquor, yeast extract, and peptone. In order to determine economically appropriate nitrogen sources, five different materials were evaluated. Three nitrogen sources of animal origin (feather meal, fish meal and meat-bone meal) and two vegetal sources (red lentil powder and cottonseed meal) are utilized. Various quantities of these nitrogen sources (%0.5, %0.75, %1) are added to fermentation media. Enzyme activity results obtained from fermentations are given following: Red Lentil $Powder_{(0,5\%)}$: 234.06 U/mL, Fish $Meal_{(0,5\%)}$: 251.67 U/mL, Feather $Meal_{(1\%)}$: 302.49 U/mL, Cottonseed $Meal_{(1\%)}$: 331.19 U/mL, Meat-Bone $Meal_{(0,75\%)}$: 652.74 U/mL. The maximum enzyme activity were 652,74 U/mL with alternative source of meat-bone meal (0,75%). Therefore, this kind of nitrogen sources can still be an economical alternative to expensive sources. Note: The authors thank Prof. Dr. Zumrut Begum Ogel (METU, Dept of Food Eng., Turkey) for the *Aspergillus sojae*.

Keywords: β-mannanase, *Aspergillus sojae,* cost effective materials

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