Production and optimization of phytase enzyme in solid bed

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Abstract Introduction: Phytase (myovinoustic acid hexaphosphate hydrolysis phosphate) is an enzyme that releases inorganic phosphorus compound phytates. Phytic acid hydrolyzes phytic acid as an anti-nutritional factor in edible legumes, grains and seeds, and thus plays an important role in the nutrition industry. Phytase has a widespread industry, but due to the high cost of production dedicated to subsurface costs and subsystem processes, its commercial usage is ignored. The aim of this study was to produce and optimize the phytase enzyme by Aspergillus niger fungus. MATERIALS AND METHODS: A culture of solid media containing rice bran, carbon sources (maltose and sucrose), aspergillus and nitrogen sources (yeast extract and peptone) were added and all environments were examined for enzyme activity. Results: The results showed that the highest levels of phytase activity in solid culture media containing rice bran with different sources of carbon were 17.58 g / l maltose and 17.55 g / l sucrose and different nitrogen sources including yeast extract The value was 4.9 grams per liter and peptone was 12.24 grams per liter. Discussion: The present study showed that maltose, sucrose, yeast extract and peptone are suitable sources of carbon and nitrogen for the production of phytase by Aspergillus niger fungus in a solid bed culture medium. Key words: Phytase, Aspergillus niger, Solid culture media

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