

Phytase Production by *Aspergillus japonicus* in Submerged Fermentation and Modifications of a New Method of Assay

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Phosphorus is a important and limited nutrient in biologic systems and the phytic acid is the main form of storage of this compost in vegetables. The phytases are enzymes that hidrolise the ester bond liberating inositol and inorganic phosphate e can be divided in histidine acid, β -propeller and purple acid phosphatase. Phytases have great potential for biotechnological use in animal feed and are mainly produced from filamentous fungi. The aim of this work was to select among 25 fungi one good producer of phytases aiming the supplementation this enzyme in animal feed. Fungal isolates were obtained from soil of several Sao Paulo areas, according to Biota program. Cultivation conditions, nutritional sources and physicochemical parameters, were optimized. The assays were carried out with 1% phytic acid in 100 mM sodium acetate buffer, pH 6.0. The inorganic phosphate formed was quantified with acidified ammonium molybdate using several methods disposable in the literature. The most adequate procedure to phytase activity was a modification from Yin *et al.* (2007) due its sensitivity, reproduction and easily. The best conditions for phytases production was in Adams or Czapeck medium supplemented with 1% straw of rice, at 30°C. Time course of phytase production showed that the highest enzymatic levels occurred after 3 days, at 100 rpm. Rice straw and fruit peels were the best inducers of phytases considering 11 carbon sources supplemented in the culture medium. The microorganism produced high enzyme levels when the medium was supplemented with 0.001% yeast extract or KH_2PO_4 .

Support: FAPESP, CNPq

Keywords: fungal phytase, assay enzymatic method, *Aspergillus*