

Amylase production with wheat flour using solid state fermentation by *Aspergillus niger* PTCC5010

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Introduction: Amylases are among the most important industrial enzymes and degrade starch to the form of soluble glucose. Amylases have extensive application in different sectors, such as; food, medicinal, textile, paper and detergents industries. Although amylases can be derived from several sources, fungal and bacterial enzymes can be applied for various industrial processes. Microbial solid state fermentation processes have potential application in enzyme production with low expenditure in huge extensive industry. **Materials and Methods:** The aim of this work was to optimize the cultural and production parameters through the statistical approach for the synthesis of alpha amylase by *Aspergillus niger* PTCC5010 in solid state fermentation (SSF) using a combination of wheat flour as the substrate. The process parameters influencing the enzyme production were identified using Taguchi design. Among the various variables screened, C source, N source, buffer size and inoculum size were most significant. **Results:** The results represent the importance of amylase production in solid state using wheat flour substrate and *Aspergillus* strain due to the availability of abundant, high-potential, low-cost production of enzymes from wheat flour. The optimum levels of these significant parameters were determined employing the Taguchi design, which revealed these as follows: C source (lactose), N source (Yeast) and buffer size (40-50 %). **Conclusion:** wheat flour can be a substrate for production of the enzyme amylase.

Keywords : Amylase, Flour, Solid state fermentation, *Aspergillus niger*

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