



## Amylase Production Through Agro-Waste

By Rai, Shalini

Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Increased production of  $\alpha$ -amylase was observed with *Bacillus amyloliquefaciens* in the present study with wheat flour among the various agro-byproducts tested. The amylase from the bacterium was optimally active at a temperature of 37°C for 72h at pH 4 $\pm$ 0.2 by using solid substrate (wheat flour) with the initial moisture of 80% and inoculated with *Bacillus amyloliquefaciens* of 2 $\times$ 10<sup>6</sup> cfu ml<sup>-1</sup> of inoculum size. Supplementation with 0.04M KH<sub>2</sub>PO<sub>4</sub>, 1% maltose as a carbon source, tryptone and ammonium chloride as inorganic and organic nitrogen source in the substrate enhanced the enzyme yield considerably. The  $\alpha$ -amylase from *Bacillus amyloliquefaciens* was partially purified by ammonium sulphate precipitation and ion exchange chromatography. Purification of amylase enzyme yielding a 2.05 fold purified enzyme with a specific activity of 11214.70 IU/mg. Characterization of purified enzyme revealed maximum stability on 65 C temperature at pH 6 $\pm$ 0.2. The enzyme was stable against Ca<sup>2+</sup>, Fe<sup>3+</sup>, Mn<sup>2+</sup> metal ions however Cu<sup>2+</sup> showed inhibitory effect. The characteristics of the enzyme qualify it as a good enzyme in biotechnological applications. | Format: Paperback | Language/Sprache: english | 96 pp.



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