

GLUCOAMYLASE PRODUCTION FROM *ASPERGILLUS NIGER* BY SOLID STATE FERMENTATION

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The *Aspergillus niger* (CFTRI 1105) was cultivated in solid state medium for glucoamylase production. In the medium containing rice bran (100g), corn flour (2g), stock mineral solution (10ml) and tap water (90ml) the glucoamylase activity was 39.8 U/g DMM (Dry Moldy Medium). When the medium containing rice bran (100g) was substituted with rice husk (100g) or rice husk (70g) - rice bran (30g), the glucoamylase activity decreased from 39.8 U/g DMM to 28.7 U/g DMM and 16.0 U/g DMM respectively. To improve the glucoamylase production the corn flour (2g) in the medium was substituted with soya flour (2g) and this increased the glucoamylase production from 9.8 U/g DMM to 84 U/g DMM. When the effect of soya flour, urea or peptone at 3.2% elemental nitrogen level with corn as carbon source was investigated omitting rice bran and rice husk the glucoamylase activity obtained was 109.1, 5.0 and 70.6 U/g DMM respectively. From the results it can be concluded that soya flour is a better nitrogen source than urea or peptone. To enhance the enzyme production by increasing the intestinal air content, rice husk (460g) was added to the control medium containing corn flour (100g), soya flour (100g), stock mineral solution (20ml) and tap water (180ml). The glucoamylase activities of test and control were 243 and 109.1 U/g DMM respectively. These studies indicate that solid state fermentation is an appropriate technology for the production of glucoamylase in developing countries although glucoamylase is produced by submerged fermentation in the developed countries.