OPTIMIZATION OF CULTURE CONDITIONS FOR PRODUCTION FORM *ASPERGILLUS NIGER BY SOLID SUBSTRATE FERMENTATION*

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Rennet production by solid state fermentation in rice bran medium was optimized. The fungus was cultivated in rice bran solid medium containing different moisture content. The maximum production of 12.9 U/g DMM (Dry Moldy Medium) of rennet was obtained at 50% moisture content at 40h. To increase the productivity of rennet, inoculum concentration on rennent production was studied. Maximum activity of 31 U/g DMM was obtained when the initial density of spores/g medium was 1×10^7. However for large scale rennet production, mycelial inoculum is more suitable than the spore inoculum. Hence, age of the mycelial inoculum in bran medium was optimized. It was observed that a solid inoculum of 10% (w/w) at about 60h of growth was the best and at this inoculum concentration, rennet production reached a maximum of 31.26 U/g DMM at 24h compared with the spore inoculum giving maximum rennet production at 40h. Rennet is a protease which hydrolyses caseinogen to casein. Hence the rennet production with casein as inducer was optimized. When different concentrations of casein ranging from 1–8% (w/w) were added to the medium, maximum rennent production (34.8 U/g DMM) was observed with 2% (w/w) casein. When casein (2%, w/w) was supplemented with soya flour (10%, w/w) rennet activity further increased by 50%.