

OPTIMIZATION OF CONDITIONS FOR CONTINUOUS
PRODUCTION OF AMYLOGLUCOSIDASE
BY ASPERGILLUS NIGER

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The continuous production of amyloglucosidase by a culture of Aspergillus niger will depend upon the period of viability of the mycelium. The metabolic status of the mycelium was monitored by measuring the NADPH level. The Aspergillus niger was grown in submerged culture at pH 4 in an orbital shaker. The growth of the mycelium and amyloglucosidase production in the agitated medium reached a maximum at 112h after inoculation with spores. Thereafter the cell mass and the NADPH level started to decline.

The effect of pH on enzyme production and the period of viability of the mycelium was studied at pH 4 and 6.5. Both the amyloglucosidase production and the viability of the mycelium were more at pH 6.5 than at pH 4. The viability of the mycelium and the reducing sugar level in the medium started to decrease when the age of the mycelium was 4 days suggesting that this decline in viability may be due to a deficiency of nutrients.

Replacement of the old medium with new and addition of spores to replace the aging mycelium with new mycelium at pH 4 and 6.5 showed that pH 4 was more favourable for mycelial growth than pH 6.5, while the enzyme production was similar in both pH values.