

**APPLICATION OF FERTILIZER FOR α -AMYLASE
PRODUCTION BY BACILLUS LICHENIFORMIS 6346
IN SOLID MEDIUM**

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Bacillus licheniformis 6346 was activated in nutrient broth (25 g l^{-1}) and inoculated to solid fermentation medium (20%, v/w). The solid fermentation medium contained (g kg^{-1}) paddy husk, 250; rice flour, 62.5; $(\text{NH}_4)_2 \text{HPO}_4$ 15.5; $\text{Na}_2\text{HPO}_4 \cdot 2\text{H}_2\text{O}$, 7.8; $\text{Na}_2\text{H}_2\text{PO}_4 \cdot 2\text{H}_2\text{O}$, 4.7, KCl, 3.13 and $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, 0.0625 and (ml kg^{-1}) gingilli oil, 23.4; coconut oil, 7.8 and tap water, 425. The inoculated medium was incubated at 42°C and maximum α -amylase activity ($790 \text{ m mole g BDM}^{-1} \text{ min}^{-1}$), was obtained on 6th day. When $(\text{NH}_4)_2 \text{HPO}_4$ (15.5 g kg^{-1}) in the solid medium was replaced with $(\text{NH}_4)_2\text{SO}_4$ (15.5 g kg^{-1} of commercially available fertilizer), maximum α -amylase activity obtained was $481 \mu \text{ mole g DBM}^{-1} \text{ min}^{-1}$ (6th day). Thus 0.6 fold reduction in α -amylase production was obtained. Then KCL (3.13 g kg^{-1}) was replaced with 3.036 g of K_2O (muredated potash) and 2.457 g of NaCl (table salt) and maximum amylase activity obtained was $766 \mu \text{ mole g DBM}^{-1} \text{ min}^{-1}$ (6th day). Further $\text{Na}_2\text{HPO}_4 \cdot 2\text{H}_2\text{O}$, (7.8 g kg^{-1}) and $\text{NaH}_2\text{PO}_4 \cdot 2\text{H}_2\text{O}$ (4.7 g kg^{-1}) in the solid medium was replaced with triple super phosphate (16.0 g kg^{-1} , T.S.P), maximum α -amylase activity obtained was $1075 \mu \text{ mole g DBM}^{-1} \text{ min}^{-1}$ (6th day). The results obtained indicated that the analytical grade salts can be replaced by locally available fertilizer for the production of α -amylase by *Bacillus licheniformis* 6346.

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