



PRODUCTION OF SINGLE-CELL PROTEIN BY *ASPERGILLUS NIGER* FROM PULSE HUSK

H. S. RAJESHWARI*, T. PARAMESWARA NAIK and K. V. AJAYAN

Department of Botany and Environmental Science, Sahyadri Science College (Autonomous)
Kuvempu University, SHIVAMOGGA – 577203 (Karnataka) INDIA

ABSTRACT

The growth of *Aspergillus niger* biomass on pulse husk broth (PHB) in submerged fermentation was studied using standard methods for determination of dry mass, final pH values and protein content was determined by Lowry's method using Carbonate-bicarbonate buffer at pH 10. Among the three pulse husk v. i. z, A: *Cajanus cajan*, B: *Cicer aeritinum*, C: *Dolichus lablab*. The medium supplemented with Glucose, $(\text{NH}_4)_2\text{SO}_4$, KH_2PO_4 , $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ and $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ the maximum yield. The effect of various nitrogen sources was compared. Ammonium sulphate gave the highest biomass yield. The mean total protein content of the biomass was 880 mg/g for culture medium A, 880 mg/g for B, 840 mg/g for C. The total amount of trace elements and major elements were determined by atomic absorption spectrophotometer GBC932AA, as the presence or absence of mineral elements has significance on yield of biomass. Glucose and nitrogen supplements increased the yield. Since PHB was successfully utilized for the enrichment of protein in product, there is a possibility of converting agro residues to proteinaeous feed and food.

Key words: *Aspergillus niger*, Biomass, Pulse husk, Protein, Pulse husk broth.

* Author for correspondence; E-mail: rajeshwaribhuvan@gmail.com