

## **Optimization of protein enrichment of deoiled rice bran by solid state fermentation using aspergillus oryzae MTCC 1846**

### **Abstract**

Rice bran is a primary by-product of the traditional rice processing industry. Once oil is extracted from rice bran, the left over residue is called de oiled rice bran (DOB). Its disposal presents economic and environmental problems. Microbial conversion of DOB into single cell protein (SCP) is an innovative practical approach for protein supplementation of a staple diet. The present research was undertaken to test the growth of industrially important fungi, *Aspergillus oryzae* MTCC 1846 on DOB through solid state fermentation (SSF) technology. Various process parameters effect such as moisture, pH of the substrate, inoculum size, temperature and nitrogen source for maximum protein enrichment were studied. The optimum conditions for the enrichment process were found to be moisture content 60%; temperature 28°C; pH 6.0; inoculum's concentration 10<sup>9</sup> spores/ g substrate and particle size of DOB, 0.3 mm. Among the various nitrogen source tested, ammonium sulfate (0.6% w/w) showed maximum protein enrichment (24.30%) followed by vegetable + fruit waste extract (23.50%) and legume root extract (23.10%).