ABSTRACT

This present research deals with the Production and Extraction of commercially important Glucoamylase from wild type and mutant strains of *Trichoderma viride*. Industrially important glucoamylase production was done by *Trichoderma viride* under optimized conditions using a submerged fermentation technique. The enzyme was produced at 25°C temperature, 5.5p H, and 5ml inoculation for about 5 days. The glucoamylase showed maximum production as glucose and nitrogen in sucrose and yeast extract source. The mineral salts used 2g KH_2PO_4, 2g $MgSO_4$, 0.5g $MnSO_4$, 2g NaCl, 2g $FeSO_4$, and 2g $ZnSO_4$ also showed the highest growth of glucoamylase. The highest enzyme yield was observed in Sucrose (3.00±0.005mg/ml), ammonium solution (3.00±0.065mg/ml). *Trichoderma viride* were subjected to mutagenesis with chemical (Ethane Methane Sulfonate) and physical (UV) mutagen to enhance the production of enzyme. The yield of wild and mutant *Trichoderma viride* was also compared. The highest yield was observed from UV irradiation (2.097±0.005mg/ml). It was also observed that *Trichoderma viride* and the process of surface fermentation using OFAT was cost effective and sustainable.