ABSTRACT

The present study is concerned with the submerged fermentation of xylanase by mutant strain of *Aspergillus niger* in stirred fermentor. The strain GCBT-35 was obtained from the available stock culture of Biotechnology Research Centre, Department of Botany, Government College University Lahore. It was previously developed by subjecting to 0.25 µg/ml N-methyl N-nitro N-nitroso guanidine (MNNG) treatment for 45 min. Different culture media were tested for the production of enzyme and M2 medium containing (%, w/v) $NaNO_3$ 0.1, Tween 80 0.2, NH_4Cl 0.1, KH_2PO_4 0.1, $MgSO_4.7H_2O$ 0.03, $CaCl_2.2H_2O$ 0.1, meat extract 0.5, wheat bran 2.0 was found to be comparatively better for xylanase production (105.74 U/mL/min). Agricultural by-products such as wheat bran, wheat straw, rice bran, rice straw and sugar cane bagasse were tested for xylanase production. Among the substrates, wheat bran at a level of 2.0 % (w/v) gave the best results. The cultural conditions such as incubation temperature (30°C), initial pH (4.0) and 24 h old vegetative inoculum size (4.0 %, v/v) were also optimized. The optimal production of xylanase (147.38 U/mL/min) was achieved 48 h after the inoculation when agitation intensity was kept at 200 rpm and air supply at 0.7 vvm (dissolved oxygen 15 %).