

Studies on crude enzyme preparation obtained from indigenously isolated fungal strain for environment friendly textile desizing

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Textile desizing involves the removal of starch from the fabric on which it serves as the strengthening agent to prevent breaking of the warp thread during the weaving process. After weaving the cloth, the starch has to be removed before the dyeing process for efficient dye absorption by the cloth fibres. Chemical desizing has been long used and has been associated with increase in chemical pollutants in the textile industry effluent. Enzymes, particularly, amylases are instead being used nowadays as effective textile desizer, thereby decreasing the environment pollution attributed to textile industry effluent. The present study was undertaken to study amylases of indigenously isolated fungal strains to select the best amylase producer, which was further characterized for production of crude amylases under optimum conditions of solid state fermentation using cheap lignocellulosic substrate. Subsequently, the crude amylases produced under optimized conditions of SSF were checked for its efficacy in textile desizing. The crude amylase preparation successfully desized the textile fabric by 73% at an incubation temperature of 70°C, and incubation time of 60 mins. The crude amylase preparation was stable at high temperature and pH and retained about 25% of its maximum activity at a temperature of 80°C and about 50% of its maximum activity at a pH of 8.0, thereby adding to its successful application under harsh conditions of temperature and pH prevalent during industrial textile desizing. The use of cheap lignocellulosic substrate for enzyme production further makes the process economical.

Biography

Shalini Singh has completed her Ph.D at the age of 28 years from Indian Institute of Technology Roorkee, Roorkee. She is currently working as Assistant Professor, Department of Biotechnology, Lovely Professional University, Punjab, India. She has published 7 papers in reputed journals. She has presented 2 research papers in International conference, as an invited speaker. She is an invited reviewer for international journals of repute. She has successfully supervised 9 thesis projects including Master of Philosophy (M.Phil.) and Master of Technology (M. Tech.) and Master of Science (M. Sc.).

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