

# Biobleaching of banana fibre pulp with incorporation of xylanase enzyme from *Aspergillus oryzae*

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**ABSTRACT :** The potential of extracellular xylanase produced by *Aspergillus oryzae* through solid state fermentation was investigated on banana fibre pulp bleaching in association with conventional bleaching with chlorine dioxide. The maximum enzyme production was obtained at 30°C after 48 hrs of incubation using wheat bran substrate. Highest enzyme activity 1136 IU/g dry substrate was found under optimized condition. Banana fibre pulp were pretreated with different dose of xylanase enzyme before the conventional bleaching sequence. Xylanase pre-treatment reduce the kappa no and enhance the optical and physical properties of pulp. The maximum reduction in kappa no were 1.3 unit at the dose of 30 IU/g. Xylanase treatment also improve burst index, tensile index and double fold by 11.81 per cent, 5.7 per cent and 2.8 per cent, respectively.

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## Key Words :

*Aspergillus oryzae*, Xylanase, Biobleaching, Solid-state fermentation

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