

XYLANASE PRODUCTION BY *Ganoderma resinaceum* IN SOLID-STATE
FERMENTATION AND SUBMERGED CULTURE CONDITIONS

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Xylan is the second most abundant biopolymer and the major hemicelluloses polysaccharide found in the plant cell wall, and xylanases degrade this xylan into small oligomers. These xylanases are used in industry for improving the digestibility of animal feed, clarification of fruit juice and bleaching of kraft pulp. Filamentous fungi are interesting producers of xylanases from an industrial point of view because they produce higher xylanase levels compared to yeast or bacteria. The purpose of this study was to investigate the production of xylanase grown under solid-state fermentation (SSF) and submerged fermentation (SmF) by *Ganoderma resinaceum*. The optima conditions for maximum production of xylanase were obtained in 6 days in SSF and 10 days in SmF conditions after incubation at 25°C supplemented with industrial wastes as carbon source. Several agricultural residues were tested to the production of xylanase, but only wheat germ and corn cob induced xylanase in SSF (3.71 U/ml) and SmF conditions (2.14U/ml), respectively. The assays were carried out with 1% birchwood xylan and the reducing sugar was then quantified by DNS. Xylanase obtained in SSF showed optima temperature at 65°C and pH value 6.0. Solid-state fermentation was found to be higher than submerged culture conditions by *G. resinaceum* for xylanase production.

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