K.L.E. SOCIETY'S

B.V. BHOOMARADDI COLLEGE OF ENGINEERING & TECHNOLOGY, HUBLI

(An Autonomous Institution affiliated to VTU, Belgaum)

2013 - 2014

K.L.E. Society
BVBCET
CREATING VALUE
LEVERAGING KNOWLEDGE

DEPARTMENT OF BIOTECHNOLOGY

PROJECT TITLE:

Bioprocesssing of food industrial waste for value addition products from Solid State Fermentation.

STUDENTS NAME WITH USN

SHASHIDHAR .H	2BV10BT038
SNEHA. K	2BV10BT041
SOUMYA.C	2BV10BT043

Under the guidance of

Guide Prof. L.R Patil

Co-guide – Prof. Sharanappa .A

Abstract:
Xylanase was produced by *Aspergillus niger* utilizing lemon peels in solid state fermentation (SSF).The organism was induced to produce xylanase by frequent subculturing on a medium containing 2% xylan. Different fermentation parameters such as moisture content, particle size, incubation period, incubation temperature, extraction buffer pH and peptone concentration were investigated at individual level. Under the optimized conditions, the activity of xylanase obtained was maximum for a particle size of 1.7mm, moisture content of 80%, peptone concentration in nutrient solution at 0.3% and extraction pH of 7.0.The enzyme was purified by ammonium sulphate fractionation (80%saturation) followed by dialysis and gel filtration chromatography, the fractions showing high activity were pooled and further used for SDS PAGE and the molecular weight of the enzyme was found to be 33.8KDa. Xylanase in our present study was used to clarify sweet lemon juice and the crude extract was able to clarify upto 38% after 6 hours of incubation which was comparable to that of commercially available standard xylanase enzyme.

Key words: Lemon peels, Xylanase, *Aspergillus niger*, Solid state fermentation.