



Biocontrol & Extracellular Enzymatic Activity of Plant Pathogens Isolated from Soil of Sanganer, Jaipur (India)

Singh Amrita , Sharma Richa *

Department of Biotechnology and Allied Sciences, Jayoti Vidyapeeth Women's University, Jaipur, Rajasthan, India

Address for Correspondence: Sharma Richa; richa.phd.15@gmail.com

ABSTRACT: The biocontrol potential of *Trichoderma* against plant pathogen, *A. niger*, *A. fumigatus*, *Aspergillus flavus* and *Fusarium*, were studied *in vitro* using the dual culture technique. The test organisms were isolated from the soil of Sanganer. Results revealed that antagonist *Trichoderma sp.* effectively checked the growth of the plant pathogens. The antagonist (*Trichoderma*) grew faster than the plant pathogen and produced inhibition zones, thereby limiting the growth of the pathogen. Maximum growth inhibition by *Trichoderma sp.* (biocontrol agent) was found in the following order i.e. *Fusarium sp.* (46.66%), *A. fumigatus* (42.85%), *A. flavus* (40.00%) and *A. niger* (24.44%). The disease causing organisms enter the host tissue by dissolving the host cell wall through secretion of toxins or enzymes. The enzymes produced by pathogens affect cell wall composition and degrade the cell wall. Many fungal strains secrete higher amounts of extracellular enzymes with potential industrial exploitation than bacteria in feasible amounts. The present investigation was conducted to examine the extracellular enzymatic activity of filamentous fungi contaminating or infecting plants. These enzymes are applied in various industries like detergents, food, textile, animal feed, baking, pulp and paper and leather etc. These enzymes also help in the bioremediation of toxic effluents discharged from various industries. Therefore, the objective of our study was to determine extracellular enzyme profiles of fast-growing filamentous fungi, i.e. *Aspergillus niger*, *Aspergillus flavus*, *A. fumigatus* and *Fusarium oxysporum* isolated from soil of Sanganer area. Fungal species were screened for extracellular enzyme activity like cellulase, xylanase and amylase. The present data demonstrated that the examined filamentous fungi were able to produce different enzymes. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

Conference Proceedings: International Conference on Life Sciences, Informatics, Food and Environment;
August 29- 30, 2014

Indo Global Journal of Pharmaceutical Sciences(ISSN 2249 1023 ; CODEN- IGJPAI; NLM ID: 101610675) indexed and abstracted in EMBASE(Elsevier), SCIRUS(Elsevier),CABI, CAB Abstracts, Chemical Abstract Services(CAS), American Chemical Society(ACS), Index Copernicus, EBSCO, DOAJ, Google Scholar and many more. For further details, visit <http://iglobaljournal.com>