Enzyme producing capabilities of some extremophilic fungal strains isolated from different habitats of Wadi El-Natrun, Egypt. Part 2: Cellulase, xylanase and pectinase

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Abstract:

ABSTRACT Forty isolates of the most commonly encountered fungal species from different extreme habitats of Wadi El-Natrun region were tested for their capabilities of producing cellulase, xylanase and pectinase enzymes. Most of these isolates had the capabilities of producing cellulase (95% of the isolates), but with different degrees; however only 3 out of 20 isolates tested were xylanolytic (15%) and one out of 39 was pectinolytic. Eleven strains showed high producing abilities of cellulase and only 2 of xylanase on different screening media. Of the high cellulase producers: some produced cellulase on one medium only e.g. the control medium (Alternaria alternata), medium adjusted at pH 4 (Aspergillus terreus, Cladosporium cladosporioides) or medium supplemented with 10% NaCl (Emericella nidulans, Fusarium solani, Cochliobolus australiensis). Others produced cellulase on the control, 10% NaCl and the acidic media (Emericella nidulans) or on control, 10% NaCl and alkaline media (Cladosporium cladosporioides). Some isolates produced cellulase on both the control, acidic, alkaline and NaCl media (Emericella nidulans). The highly xylanolytic activities were demonstrated only by Emericella nidulan isolates. Finally, the present results reveal some very interesting isolates having the high capabilities for producing more than one enzyme on more than one of the screening media.

Keywords:

Keywords: Extremophiles; Wadi El-Natrun; Enzymes; Cellulases; Xylanases; Pectinases.

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