

Isolation and Characterization of Cellulase Producing Fungi Gilan forests of Northern Iran

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Abstract Background: A wide range of microorganisms, such as bacteria and fungi can degrade cellulose and other fibers are present in plant cell walls. Although fungi play a key role in the destruction of the remains of plants in soil ecosystems, but most of them remain unidentified. Due to the many uses for these enzymes in various industries, the aim of this study was to isolate fungi the soil cellulase-producing forests of Gilan in northern Iran. **methods:** Using the screening method, 56 species of fungi than 21 types of soil in 18 geographically diverse forests of Gilan by dilution and direct seeding in the solid medium PDA isolated 20 of these fungi have cellulase activity better than the rest were. Cellulase activity, Mendel agar medium containing carboxymethyl cellulose has been investigated and the production process was optimized cellulase-producing enzyme in the best way. The microscopic and macroscopic fungi in order to explore the possibility of identifying characteristics on the basis of morphological characters in other cultures CYA 20S, CZA, CZA 20S, MEA, CYA at 25 to 27 degrees for single-point at the center of the plate after 7 days were investigated. **Results:** A total of 7 species of *Aspergillus niger*, *Aspergillus (A.niger)*, *Aspergillus Vamvry (A. awamori)*, *Aspergillus Krbvnaryvs (A. carbonarius)*, *Aspergillus Lyasyvs (A. alliaceus)*, *Aspergillus Mlyvs (A. melleus)*, *Aspergillus Ftydvs (A. foetidus)* and *Aspergillus parasiticus (A. parasiticus)* identify *Aspergillus niger* and the enzyme production process was optimized. The enzyme activity after 48 hours of incubation at 35 ° C for most of the 101/0 mg ml per minute was measured. Enzyme activity at pH 5 after 48 hours of incubation, most of the 290/0 mg ml per minute was measured. The enzyme activity using filter paper after 48 hours of incubation, most of the 076/0 mg ml per minute was measured. **Conclusion:** forest soil fungal diversity can be a source of new fungal species considered.

Keywords : Key words: cellulose, cellulose, Slvlaytyk fungus, soil, optimization

