

Biodegradation of Cellulosic Materials by Marine Fungi Isolated from South Corniche of Jeddah, Saudi Arabia

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Abstract : Twenty-eight fungal isolates belonging to 12 genera were derived from debris, sediment and water samples collected from Avicennia marina stands 25km south of Jeddah city on the Red Sea coast of Saudi Arabia. Eight of these isolates were found to be able to grow in association cellulosic waste materials under in vitro conditions in the absence of any carbon source. Isolates were further tested for their potential to degrade paper and clothes wastes by co-cultivation under aeration on a rotary shaker. These fungi accumulated significantly higher biomass, produced ligninolytic and cellulase enzymes, and liberated larger volumes of CO₂. These observations indicated that the selected isolates were able to break down and consume the waste materials.

Keywords : biodegradation, enzyme activity, waste materials, mangrove

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