



Short Communication

Ten arenicolous marine fungi from Libya

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Abstract

In present study, Ten Arenicolous species of marine fungi, *Arenariomyces majusculus*, Kohlm., *Corollospora maritima* werder, *Corollospora* sp. (Ascomycetes) and *Alternaria alternata*, *Aspergillus niger*, *Dreschlera* sp, *Fusarium oxysporium*, *Penicillium chrsogenum*, *Scopiolariopsis* sp and *Trichoderma* sp. (Hyphomycetes) are identified for the first time from Libya.

Keywords: Arenicolous, Fungi, Ascomycetes, Hyphomycetes, Libya.

Introduction

The group of fungi inhabiting sand is referred to as Arenicolous Marine fungi have been traditionally studied by collection, incubation and examination of range of substrates and each yielding its own characteristic group of fungi^{1,2}. Several methods are used to harvest such Arenicolous fungi, amongst them collection of sand-buried woody materials³ (less than one meter), along the shore at low tide. Investigation of marine fungi has found a specialized mycota including Ascomycetes and Hyphomycetes adapted to life on or among sand grains.

The mycelia of these fungi help to bind sand grains on the surface of wood and then sporulate on such hard substrate like sand⁴. Arenicolous Ascomycetes possess some common characteristics. They have small fruit bodies, Ascomata, lake central necks and have thick carbonaceous walls. The associated ascospores are appendaged and often found to be trapped in sea foam². The use of foam samples is also well established to indicate the mycota present in marine and freshwater streams⁵. Relatively little research has been conducted on Arenicolous marine fungi in this ecosystem^{2,3,6}.

The aim of this work is to report on Arenicolous marine fungi from Libya.

Methods

The method of collection and delivery of sand buried wood sampling were collected from the following locations: Janzor, Alsiahia, Gergarish, Alrimal and Albaladi along the Libyan coast (Table-1). The collected specimens were transported in sterile plastic bags to the laboratory where they were examined under light microscope. Standard identification keys were used^{2,7}.

Results and discussion

A total of ten fungal species were identified. The identified species belong to the classes Ascomycetes (3 species) and Hyphomycetes (7 species). The Ascomycetes *Arenariomyces majusculus* Figure-1, *Corollospora maritima* Figure-2 and *Corollospora* sp. were found on sand buried wood collected from the all locations included in the present study. Some Hyphomycetes were detected in one location as with *Dreschlera* sp. which identified from Gergarish and *Scopiolariopsis* sp. from Alrimal beaches. On the other hand, some of the identified Hyphomycetes were detected in more than one studied locations. For example, *Alternaria alternata* found on sand buried wood at Janzor and Ghergarish, and *Trichoderma* was found at Janzor and Alrimal locations. From 100 samples examined from the five beaches studied only 23 samples posing fungal growth.

Table-1: Fungal species identified and their locations of isolation.

	Fungi	Location
Asco mycetes	<i>Arenariomyces majusculus</i>	All studied locations
	<i>Corollospora</i> sp.	All studied locations
	<i>Corollospora maritima</i>	All studied locations
Hypho mycetes	<i>Alternaria alternata</i>	Janzor and Ghergarish
	<i>Aspergillus niger</i>	Janzor, Ghergarish and Alrimal
	<i>Drechslera</i> sp	Ghergarish
	<i>Fusarium oxysporium</i>	Alsiahia, Alrimal and Albaladi
	<i>Penicillium chrsogenum</i>	Janzor, Alsiahia and Alrimal
	<i>Scopiolariopsis</i> sp.	Alrimal
	<i>Trichoderma</i> sp.	Janzor and Alrimal

Identification sheets include description of reported taxa were deposited in Biology Research Center, Tajoura - Tripoli Libya.

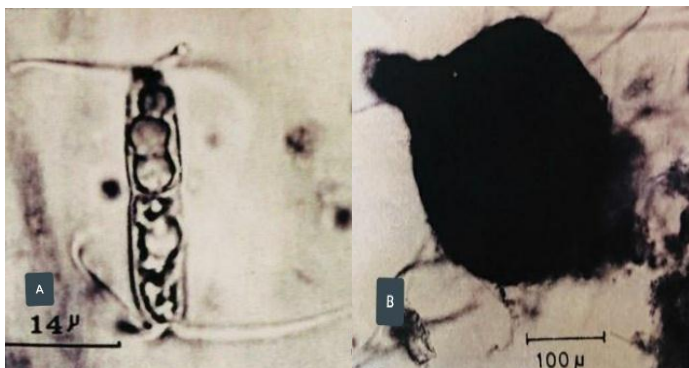


Figure-1: *Arenariomyces majusculus*. A-Ascospore, B-Ascocarp, Scale bars, A=14 micron, B=100 micron.

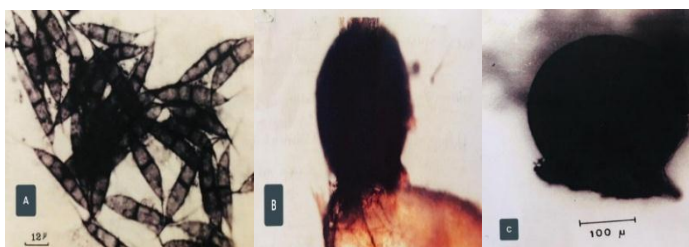


Figure-2: *Corollospora maritima* A-Ascospores, B-Ascocarp on sand grains, C- Ascocarp, scale bars, A=12 micron, B,C= 100 micron.

Discussion: In the present work, *Arenariomyces majusculus*, Figure-1 was isolated from sand buried wood collected in all five locations included in this study. These fungi isolated from various animals' substrates including wood Borers and mollusks collected from intertidal beaches along west coast of India³.

Corollospora maritima. Figure-2 is characteristic of wood associated with sand. *Corollospora maritima* was previously detected in driftwood and landed rhizomes of the seagrass *Posidonia oceanica* in western coast of Libya⁸. *Corollospora* sp. remains unidentified to species level until sufficient materials become available. Ascospores, 30-36 micron long and 3-septate. Among the Hyphomycetes isolated in the present study, *Alternaria alternata*, *Fusarium oxysporium*, *Aspergillus niger* and *Penicillium* sp. are known as saprophytes adapted to marine environments and play an important action of degradation of submerged organic matter⁹. *Alternaria alternata* was isolated from freshwater habitats in Libya¹⁰. *Fusarium oxysporium* was possibly a contaminant on sand buried wood collected samples. Ibrahim and Mohammed¹¹ reported that the fungus was frequently isolated from atmospheric air of El baida city, Libya. On other hand *Dreschlera* sp. was detected on sand buried wood materials collected in Alrimal beache only. The organism has been reported from tsunami affected beaches in southeast of India¹². *Trichoderma* sp. was isolated from sand buried wood mainly in the locations of Janzor and Alrimal beaches.

Insufficient materials prevent a thorough study of its morphology; however *Trichoderma* spp. *Trichoderma* sp. was isolated from Marine sediments¹⁰.

Conclusion

Ten Arenicolous species of marine fungi have been identified from Libya. These taxa belong to the classes Ascomycetes (3 taxa) and Hyphomycetes (7 taxa).

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