

Contribution to the mycobiota of Egypt *Emericella stella-maris* Zalar, Frisvad & Samson 2008, a new record to Egypt

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Abstract: Two isolates of *Emericella* with stellate-shaped ascospores were isolated during surveys of filamentous fungi of *Citrus* plantations in Assiut area, Egypt. The isolates were examined for its macroscopic and microscopic features and they were identified as *Emericella stella-maris*. This species is being recorded here for the first time in Egypt and probably the second record after Zalar *et al.* (2008). *E. stella-maris* is different from *Emericella varicolor* by its septate, long conidiophore and its inability to grow at 37°C.

Key words: *Emericella stella-maris*, *Citrus* plantations, mycobiota, Egypt.

Introduction

Emericella species with stellate-shaped ascospores has been described for the first time in 1857 as *Emericella varicolor* by Berkeley & Broome and still represented by one species for 140 years. In 1997, Stchigel & Guarro described a second species, *Emericella pluriseminata* from Indian soil. A third species, *Emericella venezuelensis* was described in 2004 by Frisvad & Samson from a sponge in red mangrove surface water in Mochima Bay, Venezuela. Zalar *et al.* (2008) described two more species: *Emericella olivicola* from decaying fruits of *Olea europaea* in Italy and *Emericella stella-maris* from *Eucalyptus* leaf litter in Tunisia and hypersaline saltern water of Adriatic coast in Slovenia.

In Egypt, *E. varicolor*, the only stellate-shaped ascosporic species of *Emericella* reported, was isolated from soil and salt marsh soils, wheat and corn grains and the air at Assiut (refer to Moubasher 1993). A second stellate-shaped ascosporic *Emericella* species, *E. stella-maris* was isolated from the air of orange plantations and this is the first record in Egypt and probably the second record after Zalar *et al.* (2008). It was recovered in October 2008 and February 2009 on DYM (dichloran yeast extract malt extract) agar, in June and August 2008 and February 2009 on DRBC (dichloran rose Bengal chloramphenicol) agar. Representative isolates were deposited in the Culture Collection of the Assiut University Mycological Centre as AUMC nos. 5778 and 6239.

Description of *Emericella stella-maris* Zalar, Frisvad & Samson 2008

Anamorph: *Aspergillus stella-maris*
Zalar, Frisvad & Samson 2008

Colonies attaining 50–70 mm after 14 d at 25°C on MEA (malt extract agar), 60–65 mm on CYA (Czapek yeast extract agar), ascomata arranged in concentric circles. Conidiophores developing mainly in colony center, with smooth, 200–500 µm long, 3.5–7.0 µm wide, hyaline to brownish septate stipes. Vesicles clavate to globose, hyaline to brownish, 9.0–22.0 µm wide; metulae hyaline to brownish, 5.0–9.5 x 3.0–4.5 µm, bearing whorls of up to four adpressed flask-shaped phialides, 5.5–9.5 x 2.0–3.0 µm. Conidia globose to subglobose, 2.0–3.5 µm diam., smooth-walled to echinulate. Ascomata cleistothecial, oblong, 630–880 µm long x 300–630 µm wide. Hülle cells globose to ovoid, 12–22 µm diam. Asci stellate consisting of globose to subglobose, 10–14 µm diam. wide body and 2.5–6.5 µm long equatorial spikes, 8-spored. Ascospores orange-red, in surface view stellate, 10.0–16.0 µm; spore body smooth, subglobose, 3.0–4.5 x 2.5–4.5 µm, in side view broadly lenticular, with two stellate equatorial crests; undissected part of crests 1.0–1.5 µm broad, with 3.0–4.5 µm long extensions; crests regularly ornamented with longitudinal pleats. *Emericella stella-maris* is clearly distinct from *E. varicolor* by its septate, long stipe and its inability to grow at 37°C.

Species	Growth at 37°C	Stipe length	Vesicle diam.	Conidia size	Hülle cells size	Ascomata size	Ascospores size
<i>Emericella varicolor</i>	Good growth	140-200 µm	8-10 µm	2.5-3.5 µm	Up to 30 µm	300-600 x 1000-1500 µm	3.6-4.0 µm, crest up to 4.0 µm wide
<i>Emericella stella-maris</i>	No growth	200-500 µm	9-22 µm	2.0-3.5 µm	12-22 µm	630-880 x 300-630 µm	3-4.5 x 2.5-4.5 µm, crests up to 11 µm wide

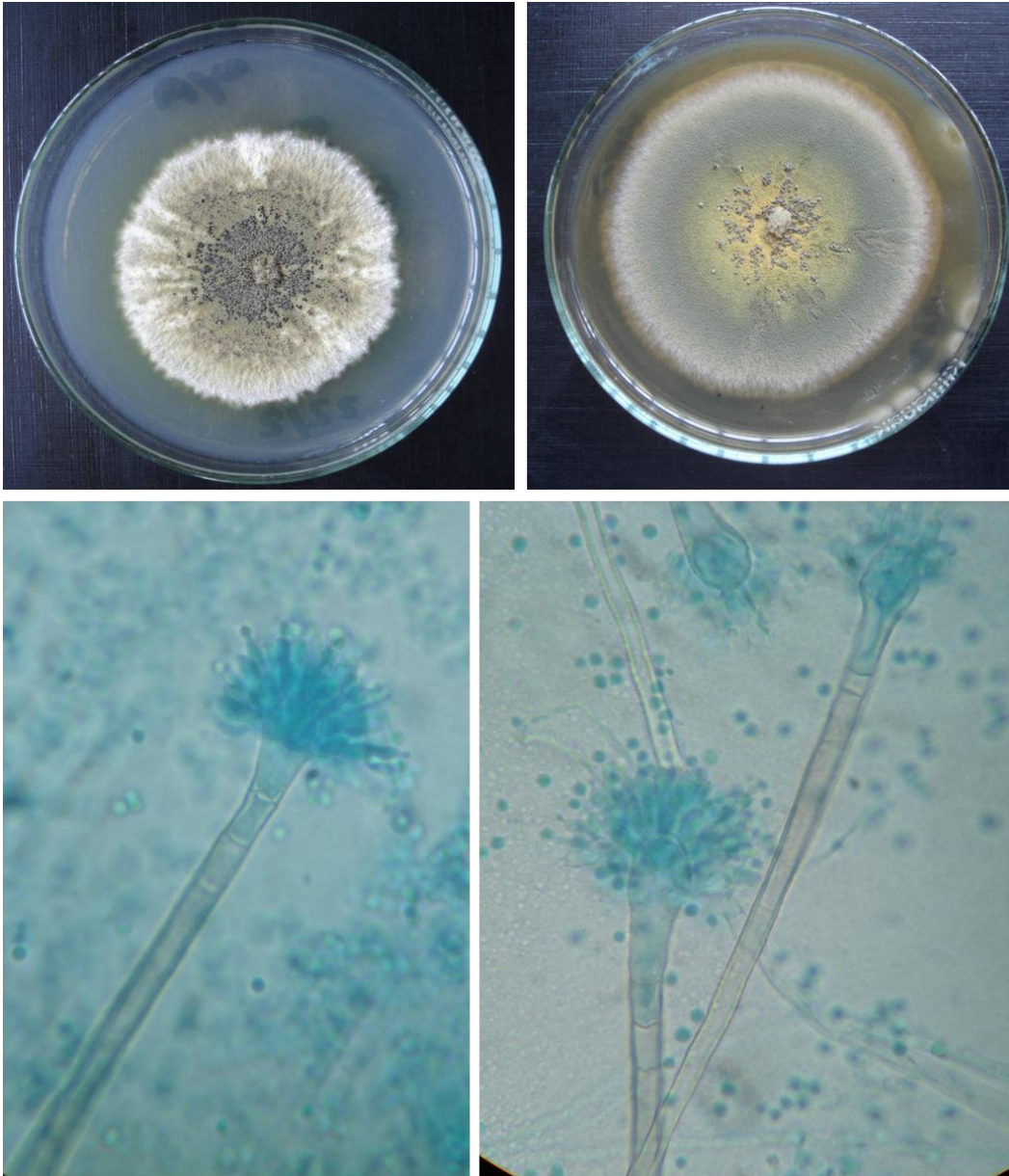


Figure 1: 14 days old colonies on CYA (top left) and MEA agar (top right); conidiophores and conidia of *Emericella stella-maris* (bottom).

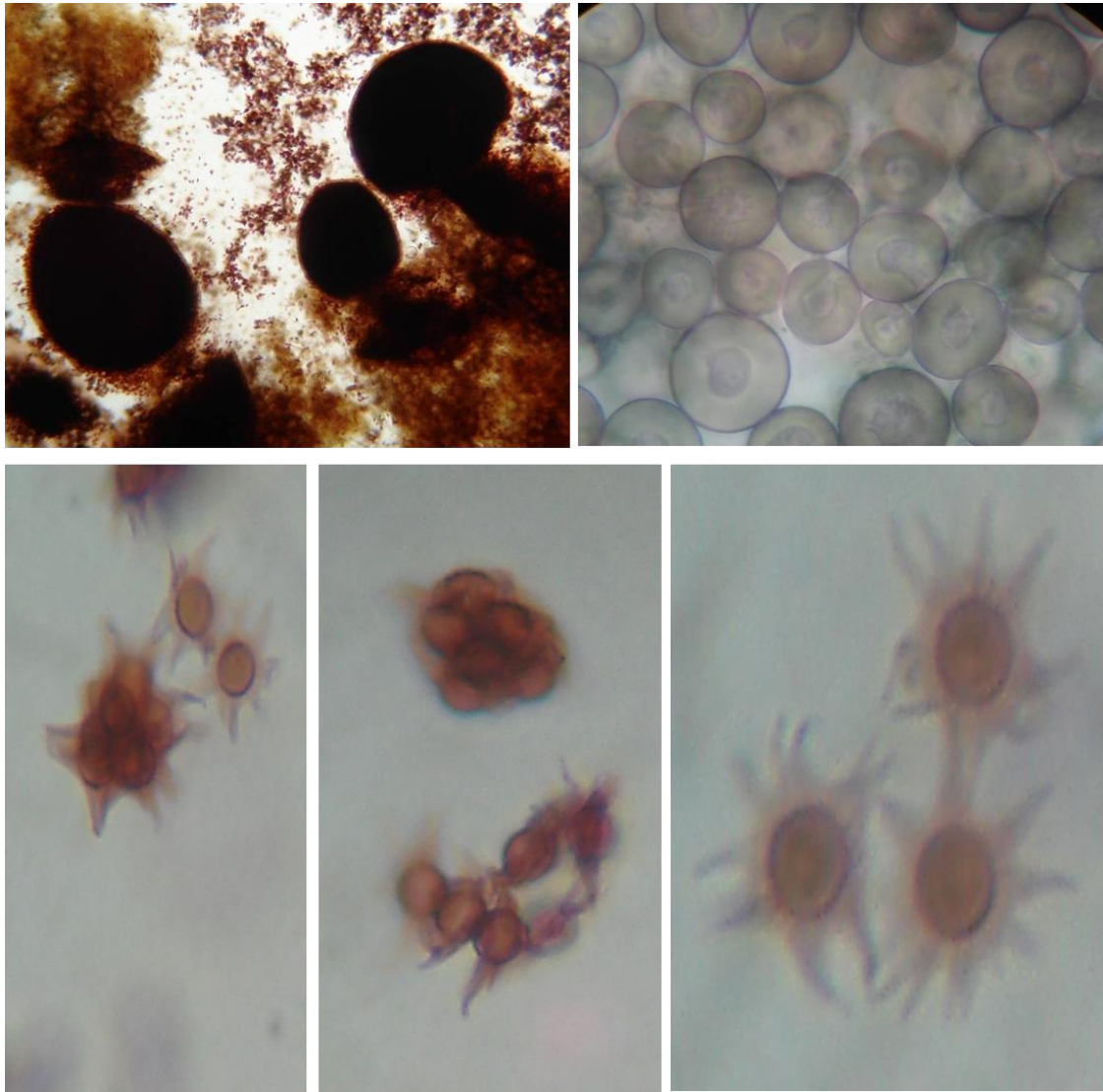


Figure 2: Ascomata (top left), Hülle cells (top right), asci, and ascospores (bottom) of *E. stella-maris*.

References

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