STUDIES IN SOME ALGICOLOUS FUNGI INHABITING ON TWO ECONOMICALLY IMPORTANT ALGAE OSCILLATORIA TENUIS C. Agardh AND SARGASSUM ILICIFOLIUM (TURNER) C. AGARDH FROM MAHARASHTRA (INDIA).

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INTRODUCTION
Algae inhabiting fungi are known as algicolous fungi and they represent taxonomically diverse group aquatic fungal biodiversity viz. mutualists, endosymbionts, parasites, pathogens and saprobes that are evolutionary, ecological and of commercial interest. In this present paper three algicolous fungi are reported. *Speiropsis pedatospora* Tubaki and *Dictyosporium digitatum* Chen, Hwang and Tzean on *Oscillatoria tenuis* C. Agardh and *Varicosporina ramulosa* Meyers and Kolhm., on *Sargassum illicifolium* (Turner) Agardh. They are recorded for the first time from India (fungal biodiversity) as well as are important regarding food security (Sargasso food and BGA as biofertilizer).

Keywords: Fungal biodiversity, Algicolous fungi, Food security

MATERIALS AND METHODS
Collections were made from both freshwater and marine water samples, submerged plant debris (wood pieces, twig, bark, leaf and petiole), submerged and decaying algae, were collected from W. Maharashtra (India). The samples were returned to the laboratory in polythene bags, transferred to moist chambers, and subsequently examined. The semi-permanent slides for the fungi isolated were prepared using lactophenol cotton blue staining method (Dring, 1976) and sealed with DPX mountant. They were also cultured on Malt Extract Agar. Recent literature was referred for identification of these fungi and algal hosts.

DESCRIPTION

*Speiropsis pedatospora* Tubaki

*J. Hattori bot. Lab.* 20: 171 (1958); Figs. 1 & 2

Colonies effuse, brownish, 0.1 to 0.2 mm in diam., mycelium partly immersed, 3 - 7 µm broad; conidiophores straight or slightly curved, macronematous, mononematous, multi septate, mid to pale-brown, 51-96 µm X 4 – 6 µm; conidia cylindrical or ellipsoidal, hyaline to mid pale, 9 - 14 µm X 3 - 6 µm, branches of compound structure, 54 – 75 µm long. Sexual stage not observed. Cultured on Malt Extract Agar medium.


*Dictyosporium digitatum* Chen, Hwang and Tzean

Mycological Research 95: 1146 (1991); Figs. 3 & 4

Colonies on algal substratum in the form of sporodochia, brown, sparsely distributed,
numerous; mycelium branched, septate, pale; conidia 46.5-74 x 26-46 μm, uniformly pale to medium reddish brown, complanate, cheiroid, maize ear like, consisting of 6-8 parallel, tightly appressed arms which are flattened in one plane, terminal cell of each arm is provided with a hyaline, thin-walled, straight appendage. Telomorph not observed. Cultured but failed to grow on Malt Extract Agar medium.

**Habitat**: Collected on living colonies of the blue green alga *Oscillatoria tenuis* Agardh from Kas Lake, Dist.-Satara, (M. S.) India. 15th Aug. 2012. Leg. V. S. Shinde and deposited in M. H. B. D. Y.C.I.S. Satara No.: 2

**Varicosporina ramulosa** Meyers and Kolhmeyer

*Can. J.Bot.* 43: 916 (1965); Figs. 5 to 7

Colonies whitish to greyish, irregular, scattered on the thallus of *Sargassum*; mycelium branched, hyaline septate; conidiophores rarely branched, multisepate 10-22 μm long; conidia hyaline, multiguttulate, branched; main axis slightly curved 27-40 x 2-4 μm at base and 2-5 μm at apex, first side branch 27 – 40 x 2-5 μm, 1-3 septate, second side branch 20-34 x 4-5 μm, rarely third side branch present. Telomorph not seen. Cultured but failed to grow on Malt Extract Agar medium.


**CONCLUSIONS**

In the present study two fungi, viz. *Speiropsis pedatospora* Tubaki and *Dictyosporium digitatum* Chen, Hwang and Tzean, were collected from *Oscillatoria tenuis* Agardh and *Varicosporina ramulosa* Meyers and Kolhmeyer was collected on *Sargassum illicifolium* (Turner) Agardh. All these fungi have been reported for the first time on algae from India. The species *Dictyosporium digitatum* Chen, Hwang and Tzean and *Varicosporina ramulosa* Meyers and Kolhmeyer have been reported for the first time...
from India. And thus, these two are new additions to the fungal biodiversity of India. While Oscillatoria tenuis Agardh a new record for Speiropsis pedatospora Tubaki.

Blue-green algae are treated as bio-fertilizers since long days. Oscillatoria is used as fertilizers to rice fields. Soil erosion is also reduced by this alga.

Sargassum illicifolium (Turner) Agardh alga mainly used in manufacture of various goitre medicines due to their high iodine content. It is known to be rich in dietary fiber and essential minerals such as calcium, iron and magnesium. Sargassum called “gulfweed,” especially in the Southern United States and Japan.

Filamentous fungi can colonize a variety of marine algae, but brown and red sea weeds hold the greatest range. So as per the food security is concerned there is need to control of fungal growth in Sargassum samples. While oscillatoria is a BGA increasing fertility of soil in rice field.

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REFERENCES


