



Method for the isolation of epiphytic algae

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Abstract

Different types of epiphytic algae were collected from six different coastal areas from two different districts of South India. The collected specimens were cleaned thoroughly using seawater and then with fresh water to remove unwanted sand particles and other algae. Further, they were identified using lugol's iodine solution under microscope.

Key words: epiphytic algae, sub-aerial, coastal area, South India

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Introduction

Generally algae are aquatic or sub-aerial (Borowitzka and Borowitzka, 1990). Certain aquatic algae grow in marine waters, where the solutes are usually 33-40,000 although some algae occur in the places like Laguna Madre of Texas where the salinity may rise up to 100% called as, halotolerant algae especially in dry seasons (Borowitzka et al., 1985). Some algae are remarkably tolerant to varying salinities such as *Enteromorpha* sp. (Seaweed) that live on that ply ships and a marine microalgae, *Dunaliella salina* both in freshwater and marine water (Raja et al., 2007a). A number of algae survive in brackish water having optimum salinity. Marine algae attach in various substrates based on this criteria they may be classified as epilithic (living on stones), epipellic (attached to mud or sand), epiphytic (attached to plants) and epizoic (attached to animals). In addition to the above classification of algal habitats, certain other categories have been erected to describe growth habits of marine algae.

Some are sub-aerial or said to be supralittoral, since they grow above the water level and in the spray zone (Inge Kronberg, 1988). Others are intertidal in that they are exposed periodically in accordance with variations in water level due to tides. Still others are sublittoral; that is, they are constantly submerged and depending on turbidity, may grow at depths as great as 100-200 m, the latter in clear tropical waters. In the present study, a survey has been made on the occurrence of epiphytic algae in the East Coast regions of South

India. Epiphytic algal specimens were collected from different habitats as mentioned above. Lot of studies has been made on the occurrence, distribution and their specific characters (Borowitzka et al., 1990). An attempt has been made to survey the occurrence of epiphytic algae along the coast of south India. This study will be useful to know the distribution of epiphytes which can be used for commercially viable products.

Materials and methods

Collection spot of epiphytes

Epiphytic algae were collected along with their host, during three different months like June, July and August 2010 from two different eastern coasts of such as Idinthakarai, Muttam, Kovalam, Kollachal of Kanyakumari District and Tuticorin, Tiruchendur of Tuticorin district, Tamil Nadu, India.

Methodology used during collection

In each area, algae samples were collected with an interval of 2 km distance during March 2009. The collected specimens were washed with seawater and fresh water. They were preserved in 4% formaldehyde solution for further experiments. All the algal epiphytes were stained with Lugol's iodine solution and observed under microscope (Frederik et al., 2011). Later these epiphytes were identified along with their host.

Results

The total number of genera and species of marine epiphytes belonging to four groups of algae occurring at Tuticorin and Kanyakumari districts.

Maximum number (twelve) of algal epiphytes was collected from Tiruchendur area and minimum number (four) of species recorded from Kovalam. Totally 12 species were collected from Tiruchendur, 10 species from Tuticorin, 10 species from Idinthakarai, 10 species from Muttam, 9 species from Kollachal and 4 species from Kovalam. The red algal epiphytes occurred more in number than green, brown and blue green algae in all these places. The blue green alga, *Oscillatoria* sp. was found only in three places. Altogether 12 species were recorded in all the six areas of which 1 species belongs to Cyanophyta, 3 species to Chlorophyta, 1 species to Phaeophyta and 7 species to Rhodophyta.

Discussion

It is evident from the investigations made earlier that 3 epiphytic algal species occur in Tiruchendur. But in the present study 12 species were collected from Tiruchendur (Krishnamurthy and Balasundaram, 1990). Four species of the algal flora, observed in the present study at six areas resemble the algal flora surveyed (Kaliaperumal and Pandian, 1985). Detailed studies on algal distribution and their seasonal occurrence from various places along Eastern Coastal areas of Tamil Nadu has to be undertaken to know more about the complete flora.

Conclusion

Lot of studies has been made on the general characters, occurrence, distribution and ecology of marine macroalgae. The above investigation will help the researchers and industrialists to find out particular epiphytes in a specific time especially in the southern coast of India.

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