

**Title: IDENTIFICATION OF DARK SEPTATE ENDOPHYTES (DSE) IN MANGROVE PLANTS ROOTS**

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**Abstract:**

Mangroves are an important estuarine zone of tropical and subtropical coasts and have a great value in habitats as food sources and refuges for marine organisms. Anthropogenic pressure can adversely affect the environment of mangroves. Among organic and inorganic pollutants, heavy metals are considered to be one of the main sources responsible for causing a negative impact. Over the past decades, the metal pollution in the mangroves is receiving increased attention. Dark Septate Endophytes (DSE) is among the most abundant colonizers of plant roots. DSE colonization is characterized by formation of microsclerotia and dark septate hyphae growing in the host root. DSE fungi can affect the heavy metal uptake of their host plants, and enhance the tolerance of their host plants to heavy metal stress. Despite the importance of understanding the base of this interaction, the number of structural studies investigating DSE associations in plant roots is considerably low. In this context, the aim of this study was to investigate the presence of Dark Septate Endophytes in mangroves plants. For identification of the DSE presence in *Laguncularia racemosa* and *Avicennia schaueriana* we collected roots of these plants in environment, Gargaú mangroves in second estuarine zone of Paraíba do Sul river, São Francisco de Itabapoana, RJ, Brazil. The root evaluation was done right after washing it with water, clarification by KOH 10% treatment (10 minutes / 25°C) and neutralization with HCl 2% (1minute / 25°C). Finally, the root was stained with Trypan Blue 0,05% for 10 minutes at 70°C. The microscope slide was mounted with Glicerol 50% and analyzed by optical microscope. In this work we observed the presence of DSE microsclerotia in *L. racemosa* and *A. schaueriana* cells root. This presence indicated a possible interaction between mangroves plants and DSE. An association of DSE with mangroves can be a cause of the mangrove heavy metal tolerance already described previously.

**Keywords:** Mangroves, Heavy metal, Dark Septate Endophyte

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