

Abstract

Seagrasses are narrow ecological and taxonomic group of plants which evolved from terrestrial ancestors some 100 million years ago. Unlike most terrestrial plants they are traditionally considered as a group not forming mycorrhizal symbioses or specific root endophytic associations. However, this opinion is likely biased by a very low number of studies targeting this group of vascular plants. For example, an anatomically and morphologically unique endophytic fungal symbiosis was recently discovered in the roots of the Mediterranean endemic species *Posidonia oceanica*, a species that is considered to be one of the best studied. It thus seems that more specialized research can yield similar results, i.e. discoveries of new fungal association in seagrasses. This could have a big impact on our opinions regarding not only mineral nutrition of these fascinating plants.

The aims of this thesis therefore are 1) to summarize published information about fungal associations in the roots of seagrasses, 2) to summarize basic knowledge of anatomy and morphology of the roots of individual groups of seagrasses and 3) an attempt to predict seagrass groups where we may more likely assume presence of fungal associations. Special emphasis will be placed on the genus *Posidonia* which has an evolutionary origin in the southeast to southwest coast of Australia, and one endemic species outside this area, the above mentioned *P. oceanica*.