MICROMORPHOLOGY STUDIES OF ENDANGERED FERN SPECIES

Marsilea quadrifolia

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The *Marsilea* genus comprises almonst 45 species spread around the globe, mostly in wetlands with slow flowing waters. *Marsilea quadrifolia* is a protected fern species according to Habitat Directive Annex II and Bern Convention and vulnerable according to the Red List of Vascular Plants of Romania (Olteanu et al. 1994). It has, according to previous studies, pharmacological properties against alzheimer disease (Aswini et al. 2012) and the crude extract has antimicrobial, cytotoxic and antioxydant activity (Farhana et. al 2009).

In Romania, *M. quadrifolia* is spread in multiple locations in the southern and western parts of the country, from Tulcea and Buzau counties to Giurgiu, Dolj, Arad and Satu Mare counties (Strat, 2012), mostly in protected areas.

Previous researches have been performed concerning ex situ conservation of rhizome phragments by in vitro cultures (Banciu et. al 2007) and the stability of the regenerants using histological (Banciu and Paunescu, 2011) and molecular markers (Banciu et. al. 2013).

The present study concerns revealing the structural particularities of the sporocarp from adult plants of *M. quadrifolia*. Our researches had the purpose of establishing new taxonomic characteristics of samples of *M. quadrifolia*, based on rezistance forms (sporocarps) that is the only part of the plant found in the cold season. Using the standard methodology for SEM, several images of entire and sectioned sporocarps and spores have been analyzed and described. Specific ornamentations and structures of the sporocarps have been described, that may be used as taxonomical markers in lack of other plant organs available.

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