

Seasonal variations in P-I responses of *Chara hispida* L. and *Potamogeton pectinatus* L. from stream mediterranean ponds



"The relationship between primary production and irradiance was analyzed over an annual cycle in the submerged macrophyte, *Chara hispida* and *Potamogeton pectinatus*, of two mediterranean stream ponds. The effect of temperature on photosynthesis was also studied. The population of *P. pectinatus* reached maximum production values of 19.67 mgO₂g⁻¹ AFDW H⁻¹ in December at 20°C. In summer and owing to the development of floating filamentous algae, *P. pectinatus* growth decreased. This can be observed in a decrease in production and chlorophyll content. At the end of autumn a 'self pruning' mechanism in *P. pectinatus* caused increase of light penetration and new shoots were observed. *C. hispida* showed maximum production values in May. In summer, in agreement with temperature increase *C. hispida* fructifies and decays, increasing *P. pectinatus* growth and cover in the same pond. Photoinhibition was observed in *C. hispida* in October, in agreement with a low radiation adaptation owing to an unusual decrease in light penetration in the pond, caused by inputs of suspended material from a fire

suffered in the watershed at the end of summer. Variations in temperature had no effect on Pm/R ratio in *C. hispida* was significant. *P. pectinatus* showed great adaptation capacity to temperature fluctuations and light penetration reduction."

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