ECOLOGY OF BENTHIC MICROALGAE IN THE EBRIO DELTA BAYS,
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The purpose of this study is to examine the abundance (evaluated by chlorophyll-a analysis and counts of number of cells), production (14C method) and distribution of benthic microalgae in the bays of Alfacs (50 km², 6.5 m maxim depth) and Fangar (10 km², 4 m maxin depth).

The biomass importance of benthic microalgae in this two bays is great; the chlorophyll-a content in the upper 3 mm of sediment is similar as the content in all water column, but primary productivity of benthic microalgae is only a quarter of phytoplankton production. This data supports the hypothesis of the existence of large inactive chlorophyll amounts in the sediment.

The microphytobenthos at the study sites is dominated by pennate diatoms (i.e. Navicula, Amphora, Nitzschia); blue-green algae are not scarce but their quantitative importance are less than diatoms, located mainly in environment poor areas (margin opposite to the fresh and fertile water runoff).

The mean benthic chlorophyll-a concentration per area unit in the upper 3 mm sediment in both bays was similar (14.5 mg/m² in Alfacs and 14.6 mg/m² in Fangar).

The horizontal distribution of chlorophyll-a in sediment surface of the bays shows a characteristic pattern in Alfacs in relation with illumination (more in shallow areas and less in the deeper ones) and the organic matter content of sediment (within the shallows areas more abundance in muddy sediments, rich in dead organic matter). In Fangar, the smaller one, no characteristic pattern has been seen, possible due to the minor mean depth and more complex sediment distribution.

The vertical distribution of chlorophyll-a and the number of cells within the sediments is variable, but in most occasions the microalgal abundance is maxima at the surface (upper 3 mm); nevertheless the majority of microalgae remain buried in the sediments at depth where light is insufficient for photosynthesis. Potential primary production per number of cells of microalgae at 1 cm depth within the sediment is similar like surface microalgae; this result informs about the health state of buried microalgae.

Like a conclusions of this study, the horizontal distribution of microalgae can be explained in part by the depth (received light) and organic dead matter content of sediment; primary production of sandy sediments seem to be a process in which are involved microorganisms presents in a considerable thickness of sediment, in which the photosynthesis is an intermittent activity (depending on microorganism localization at light or dark in a instant). This idea is contradicted with a continuous process of photosynthesys, which is more feasible in muddy sediments.