

Carbon, sulfur and biopolymers distribution sediments from the Guadiana and Aradi Rivers – South Iberian Peninsula

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Sediments represent a “recorder” of water column processes and are the final storage of autochthonous and allochthonous organic matter inputs. The aim of this investigation is to understand the trophic state quality of sediments from Guadiana and Aradi rivers (South Iberian Peninsula) using a biochemical approach applied to the analysis of the quality and quantity of sedimentary organic matter. These samples were analyzed for the following parameters: Total organic carbon (TOC) and sulphur (S); Protein (PTN), Carbohydrates (CHO) and Lipids (LIP). TOC ranged from 0.09 to 1.88% and the C:S ratio ranged from 3.88 to 44.96, indicating aerobic conditions for these environments. Comparison with river systems from Brazil and Italy allowed the classification of Guadiana and Aradi rivers as mesoligotrophic (PTN <1.5 mg/g; CHO <5 mg.g⁻¹). The PTN, CHO and LIP successive abundance is however different. In the Guadiana and Aradi rivers the succession is LIPIDS (69%) > PROTEIN

(17%) > CARBOHYDRATES (14%) while in Brazil and Italy, the succession is CARBOHYDRATES > PROTEIN > LIPIDS.

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