

Traceurs organiques dans les dépôts de la vasière Ouest-Gironde (Golfe de Gascogne)



Mud fields located in the inner part of shelves in front of large estuaries are preferential environments for the investigation of the mechanisms and evolution in time of the supply of such sedimentary bodies. The study of different constituents of the particulate organic matter trapped in the sediments of the West Gironde mud patch contributes to the knowledge of the input origins. This study was carried out with different techniques, including pyrolysis-gas chromatography-mass spectrometry and high performance liquid chromatography, on samples from a core collected in the centre of the mud field. At the bottom of the core, the increase of sugars, amino-sugars and some aromatic hydrocarbons may indicate a more marine character of organic components. The same appears to be the case at the top of the core, where, despite a finer sedimentation, biochemical characteristics could show a more pronounced marine influence than in the middle part. In the middle part of the core, on the other hand, the increase in phenols could result from an increase in lignin-derived terrestrial inputs. The increase in pyrolysis-derived cyclopentenone may indicate the same terrestrial influence, because this component has its origin in aliphatic polycarboxylic acids resulting from sail leaching. The continental character of the sedimentation is also reflected in the increase of the silt-clay fractions representative of suspended matter originating in the Gironde estuary, associated with a slight carbonate decrease. The taxonomic significance of some phenols is noteworthy: this is especially the case of the cinnamyls which, in the middle part of the core, emphasize the input of herbaceous debris and of the hydroxybenzyls which, at the bottom, provide evidence of the algal origin of part of the organic material. Thus, by means of pyrolysis results and HPLC phenol analysis, it is possible to establish the more or less continental signature of organic components trapped in the "Ouest-Gironde" mud patch. This study of organic matter, which confirms earlier sedimentological and micropaleontological data, constitutes a new approach, adapted to the identification of the origin of carbon sources.

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