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texture and appearance using a 5-point categoric scale (0. absence to 5. intense, of the attribute) and prepared products of the species (tortas of *Porphyra* sp. and pickles of *Osmundea pinnatifida*) to rate sample overall acceptability, using a 9-point hedonic scale (1. dislike extremely to 9. like extremely). Results suggest that transformed samples of the examined red algae could potentially be part of the diet of the Azorean people. These algae could provide an interesting source of omega-3 fatty acids and thus with a high level of interest from the biotechnological and commercial perspectives.

P3.26

Coastal water characterization in the Azorean archipelago

Patarra RF, Prestes AL, Álvaro NV, Terra MR, Fontaine C., Cámara A, Azevedo JMN, Neto AI

Water Frame Directive (WFD) is a fundamental tool for the management of the European water resources. The geographical situation of the Azores places specific questions to the application of the WFD to the archipelago, and this has been recognized by several authors. There is therefore a need to adapt the legal directives. Due to the high dilution power of the open ocean surrounding these Atlantic islands, the anthropogenic effects are likely to have a localized impact, depending on its intensity and temporality. On the other hand, anthropogenic activities beyond the legal frontiers may have negative impacts due to the global movement of the water masses. The knowledge of the quality of the Azorean coastal waters (RH9) using the quality parameters required by the WFD is fragmentary and there are no temporal series of data. Bibliography is scattered and of variable quality. The delimitation of water masses was done based on expert opinions, with land inputs being identified as the main threats. Water masses adjacent to urbanized areas have thus been classified as “In Doubt”. The present project aims at clarifying the status of these waters masses and to develop and test methodologies that could will used in future monitoring programmes applied to the RH9.

P3.27

Aquaculture of the clam *Tapes decussatus* on a closed system

Pereira NM, Rebelo AC, Lourenço T, Amaral AF, Prestes AL, Azevedo JMN, Neto AI

In the Azores, the clam *Tapes decussatus* (Linnaeus 1758) is only known form Fajã de Santo Cristo, a shallow coastal lagoon on the island of São Jorge. It is highly appreciated but demand exceeds supply and measures have been implemented to prevent overexploitation. A pilot project is underway to evaluate the aquaculture potential of this species in an intensive system and the possibility of producing juveniles for restocking programmes. Adult organisms, collected on their natural environment, are kept on a closed system where they are fed a mixed culture of selected microalgae. A photobioreactor was developed to automate microalgae production. Ongoing research comprises: i) studies on the species life cycles, involving induction of gametogenesis and monitoring the development of the offspring, growth, reproduction and mortality; ii) evaluation of the biotic and abiotic factors that directly influence the aquaculture of this species in an closed system; iii) optimization of culture methodologies.

P3.28

Distribution and population structure of *Helicolenus dactylopterus* (Delaroche, 1809) in the central Mediterranean (southern Tyrrhenian Sea)

Pirrera L, Perdichizzi A, Perdichizzi F, Modica L, Rinelli P

The blue-mouth, *Helicolenus dactylopterus dactylopterus* (Delaroche, 1809) (Pisces: Scorpaenidae), is a scorpionfish widespread in the whole Mediterranean basin, where it plays an important ecological role in deep-sea fish communities. The rarefaction of this large-size sedentary and slow-growing fish, can be an index of overexploitation. This species is found throughout all Italian seas; the juveniles are mainly located around 150-300 m while the adult specimens are sprend over a wider depth range down from 200 m to as deep as 1000 m . The bathymetric distribution, the abundance and the size structure of H. dactylopterus were analysed in this study, using the GIS approach to support the results obtained. The present paper integrates data from 11 bottom trawl surveys carried out in the Southern Tyrrhenian Sea (Central Mediterranean), in an area extended from Cape Suvero to Cape S. Vito. Data and samples were collected from a total of 296 hauls within the isobath of 800 meters, carried out during the “International bottom trawl surveys in the Mediterranean Sea” (MEDITS EU Project), developed from 1995 to 2005. In each haul, the catch in weight and number were recorded. The main biological parameters (total length, sex, sexual maturity) of the specimens were measured. On the basis of the sweep-out area, the mean yields, standardized both in number (Density Index: DI = N/Km2) and weight (Biomass Index: BI = Kg/ Km2) related to shelf and slope were obtained. A total of 1412 specimens of *H. dactylopterus* weighting 20051 g were caught. The species appeared in 40% of the 296 hauls analyzed, throughout the whole depth range surveyed. The highest values of frequency of occurrence (> 67%) were obtained in the slope while in the shelf fell to around 16%. On the continental shelf the species was found between 106 m and 196 m, and in the slope from 400 m to 600 m. The highest values of relative biomass and density in the slope were obtained in 2005 (BI = 3,12 Kg/Km2 and DI = 217 N/Km2), while in the shelf in 2004 (BI = 0,45 Kg/Km2 and DI = 377,9 N/Km2). The mean biomass values showed a clear increase in 2005 respect to the previous years. The length distribution of the specimens measured ranged between 2,5 cm to 24,5 cm. The specimen size increased progressively with depth from 4,5 cm (100-200m) to 13,4 cm at 500-800 m, in according with the literature.

P3.29

Characterization of transitional waters in the Azorean archipelago

Prestes AL, Patarra RF, Álvaro NV, Azevedo JMN, Neto AI

The geographical situation of the Azores places specific questions to the application of the Water Framework Directive (WFD) to the archipelago, in particular in what concerns the transitional waters, due to the specificity of factors related to the geomorphological conditions of the adjacent land areas. One of the elements for measuring water quality are biotic indexes, in which specific diversity and presence of certain taxa or ecological categories are fundamental. Having risen from the ocean in geologically recent times, the diversity of the fresh water fauna and flora in these water masses are necessarily reduced when compared with continental areas. It is also strongly dependent of occasional colorizations, many of which are accidental or intentional. On the other

hand, transitional waters of the Azores are located at the geomorphologically peculiar Fajãs of São Jorge Island, with a strong human influence on their margins, bed and communication with the sea. The knowledge of Azorean coastal waters quality based on the known quality parameters required by WFD is fragmentary and there is no temporal data series. Bibliography is dispersed and of variable quality. The present project aims at gathering temporal data to clarify the status of these water masses and to develop and test methodologies that will be used in future monitoring programmes.

P3.30

High-latitude species of marine amphipods are less adaptable to climate change than their temperate counterparts

Rastrick SPS, Whiteley NM

To further examine the adaptability of polar marine invertebrates to climate change, metabolic rates (MR) and thermal tolerances were determined in several species of ecologically important marine gammarid amphipods living at different latitudes (78-38ºN). Comparisons were made between an Arctic species, *Gammarus setosus*, a cold-temperate species, *G. oceanicus*, and a warm-temperate species with Mediterranean ancestry, *G. locusta*. MRs, measured as rates of oxygen uptake, were taken at the habitat temperatures recorded at the time of capture and scaled to a standard wet mass of 1mg. Between species, MRs were significantly lower (Krusskal-Wallis $P<0.001$) in *G. setosus* and arctic populations of *G. oceanicus* than in *G. locusta*. Thermal tolerance and aerobic scope also decreased at higher latitudes. Arctic populations (78ºN) of *G. oceanicus* had significantly (Krusskal-Wallis $P<0.05$) lower MRs than more temperate populations (58ºN). In contrast, latitude had no effect on the MRs of *G. locusta*. When acclimated to a common temperature, more northerly populations of *G. locusta* exhibited an up-regulation of MR. This was not observed in *G. oceanicus* which exhibited greater temperature dependence. It appears that warm-temperate species compensate for temperature-related changes in MRs, whereas the Arctic/cool-temperate species do not. Such differences could be related to their ancestral origins and thermal histories, as well as latitudinal variations in the thermal-stability and total energy budget of the environment. This may lead to species-related differences in the ability to survive further environmental change.

P3.31

Does the oligoguluronate-activated oxidative burst affect the defensive capacity of *Saccharina latissima*?

Rickert E, Weinberger F

We investigated the response of surface associated living bacteria after eliciting the brown alga Saccharina latissima with homooligomeric guluronic acid. This oligosaccharide is generated during enzymatic microbial attacks upon the alginate cell wall matrix of kelps and triggers an oxidative burst followed by a measurable release of hydrogen peroxide into the surrounding medium. Previous laboratory studies have shown for kelps that oligoguluronate activates or induces defensive mechanisms against endophytic algae and epiphytic bacteria. It was reported that inhibition of the oxidative burst in Macrocystis pyrifera and Laminaria digitata directly resulted in a loss of the defensive capacity against epiphytic bacteria. In our field study, in contrast, an induced oxidative burst in S. latissima did not significantly affect the number of associated living bacteria. Moreover, sporophytes treated and untreated with oligoguluronate and exposed in the Baltic Sea at 16 psu developed similarly well, suggesting that S. latissima regulates the dispersion of epiphytic bacteria either through oligoguluronate-induced gene expression or in another effective way. We also present additional laboratory experiments regarding the defence capacity of S. latissima.

P3.32

New additions to the Azorean algal flora with ecological observations on rhodoliths formations

Rosas-Alquicira EF, Couto RP, Neto AI, Riosmena-Rodríguez R

Nongeniculate coralline algae are abundant and ecologically important at the Azorean littoral. Despite their importance and abundance, they have been only sporadically investigated with a few papers reporting their presence in the archipelago. This study reports for the first time the occurrence in the Azores of Spongites yendoi, Lithophyllum corallinae and Phymatolithon calcareum. The first two were found in Ilhéu de Vila Franca-São Miguel Island, while the third in Lajes do Pico-Pico Island. All the species were found as rhodolith-forming species. In each locality the depth range and approximated area of rhodoliths were obtained in situ, while the cover percentage and rhodolith sampling was done from three 20 m long transects, where four quadrats (25 cm x 25 cm) per transect were randomly selected. For each rhodolith the mean branch density and sphericity level was also obtained. Significant differences were found on the percentage cover, maximum length and sphericity between both Islands, the higher values registered for São Miguel. No significant differences were found on the mean density and branch density between both Islands. The sphericity differences between isles seem to be influenced by the hydrodynamic conditions but further studies are necessaries to confirm this. Further studies on the taxonomy of the nongeniculate coralline algae in the Azores will be important to determine the real biodiversity of this group in the area.

P3.33

Are the reported coralline red seaweeds species for the Macaronesian region taxonomically still valid?

Rosas-Alquicira EF, Riosmena-Rodríguez R, Neto AI

The Macaronesian region, characterized by a mixed algal flora with temperate and tropical elements, is considered as an important biodiversity hot spot in the north-eastern Atlantic. The Order Corallinales is an important element in this region, with records going back to the 1800's (Canaries Archipelago) and many specimens housed in different herbariums. The taxonomy of this group has been re-evaluated on the last century but only a few species were reviewed. As a result there is no consensus on the nomenclature of most species, neither a revision of the coralline red algae taxonomy in the Macaronesian. This work is the first critical recompilation of the Macaronesian coralline red algal species. It aims to clarify nomenclatural problems and re-evaluate the Macaronesian Corallinales. The published information for the region was reviewed