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YOUMARES 9 – The Oceans: Our Research, Our Future

Proceedings of the 2018 conference for
YOUng MARine RESEARCHer in
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analyzed. Most of the documents described chemical treatment which showed decreasing effectiveness combined with increasing concentrations due to the significant development of resistance. Documents describing the use of cleaner fish showed effectiveness toward salmon lice in all studies, with little or no negative associated effects, and did not show a decreased effectiveness over time. The lack of data related to warm water treatment did not allow to assess the effectiveness of this method. Due to the development of resistance in lice selected by chemical treatments, those methods cannot be considered sustainable practices in aquaculture. Cleaner fish use is preferred if fish health and welfare criteria are met. A lack of data related to warm water treatment was noted, which is a research gap.

18.3.2 3Qs for Quality: Development of New Devices and Techniques for Seafood Quality Assessment

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Keywords: Seafood quality, Marine biotechnology and fisheries, VOCs, Biogenic amines, HPLC, GC-MS

The “3Qs for Quality” work uses a multiple approach to develop different types of methodologies for the assessment of seafood quality. The freshness of selected fish species (*Trachurus trachurus* and *Sarda sarda*) were analyzed for

volatile organic compounds (VOCs) (without the need for any pre-treatment of the samples) by the ion mass spectrometry (IMS) technique (FlavourSpec), using a multi-capillary pre-separation (MCC), which allows to analyze wet samples and provide extreme sensitivity for detection of nitrogenous compounds (e.g., biogenic amines). Additionally, biogenic amines (BA) present in seafood samples were also analyzed by the conventional techniques (HPLC, GC-MS, and ELISA) for method optimization and validation of the results. In addition, samples were analyzed by performing the traditional sensory methods and the Quality Index Method (QIM) for the assessment of seafood quality. The results obtained from the different techniques provided valuable information about the quality and freshness of fish and were integrated for a better detection of fish degradation. Finally, taking in account that food degradation and (bio)contamination is a worldwide problem responsible for numerous poisoning and disease events and that health authorities asked for new methodologies and techniques, we believe that our study can promote the use of advanced techniques for seafood quality assessment.

18.3.3 Interannual Variations in the Relationships Between Life Weight and Content in Biochemical Compounds of Muscle of the Anchovy *Engraulis encrasicolus* in the Bay of Biscay as Likely Indicator of Changes in the Reproductive Effort

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Keywords: Molecular analysis, Atlantic, Fishery, Temporal analysis, Sexual

Condition factors based in life weights (LW) have a limited utility when estimating the well-being status of a fish population. Quantification of major biochemical constituents is much more biologically informative, but it requires time and resources. In 2005, after several consecutive failures in annual recruitment, anchovy biomass in the Bay of Biscay dropped to dangerous levels so that fishery was closed, up to be reopened in 2010. During the last years of this closure, two surveys in spring of May 2008 and May 2009 were carried out in order to estimate biological parameters of adults. In contrast, anchovies sampled in May 2016 were sampled, with the fishery already open. 965 anchovies were fished and dissected; their LW were registered, and total biochemical