

MYTILOS AND MYTIMED PROJECTS MONITORING CHEMICAL CONTAMINATION IN THE MEDITERRANEAN SEA

Bruno Andral¹ *, François Galgani¹ and Charlotte Blottiere²

¹ IFREMER : Zone Portuaire de Brégaillon - BP 330 - 83507 La Seyne sur Mer cedex, France. - bruno.andral@ifremer.fr

² Toulon Var Technologies : Maison des Technologies - Place Georges Pompidou - 83000 Toulon, France.

Abstract

Main objective of Mytilos and Mytimed projects is to assess the level of chemical contamination for the Western and Eastern Mediterranean coastal waters, using a standard protocol developed since 1996 by Ifremer using man-made cages containing mussels (*Mytilus galloprovincialis*).

Keywords : *Monitoring, Bivalves, Eastern Mediterranean, Western Mediterranean.*

Mytilos and Mytimed projects are supported by the Interreg IIIB MEDOCC program. They take place within the frame of the MEDICIS program from Ifremer. MEDICIS is a targeted research program which objectives are to improve knowledge of inputs, fate and to reduce chemical contamination of the Mediterranean Sea.

Mytilos project (2004 to 2006) was developed for the whole Western Mediterranean basin (with 120 mussel cage stations). The geographical areas are Spain coasts with Balearic islands, French coasts (including Corsica island), West Italian coasts (including Sicily and Sardinia), Morocco, Algeria and North of Tunisia (figure 1). Mytimed project (2006 to 2008) concerns Eastern Mediterranean coastal waters (about 120 stations). The geographical areas are Aegean sea (Greece and Turkey), Coasts of South Turkey, Syria, Lebanon and Cyprus, East of Tunisia, South-east of Italy and Western coast of Greece (linked to Mytilos project).

Methodology

Active biomonitoring consists in putting mussel cages in targeted locations for a desired duration (about 3 months) while mussels accumulate contaminants. Sea stations were located by means of combined use of DGPS, panoramic sonar, and depth-sounding systems. Samples were recovered either by divers or by grappling hooks. After recovery, contaminants levels in organism flesh are measured.

automatic data processing software (statistics) and advanced data display (graphics, classification, GIS linksÀ).

Contributors

France (TVT program coordination, IFREMER technical coordination), Italy (ICRAM, PSTS Sicily), Spain (IEO, IMEDEA-UIB Balearic islands and IIQAB-CSIC), Morocco (INRH, MATEE and University Ibn Zohr), Algeria (ISMAL), Tunisia (INSTM), Greece (HCMR, ANEM S.A), Turkey (IMS / Middle East Technical University), Syria (HIMR / Tishreen University), Lebanon (NCMS).

MAP/MED POL in relation with regional monitoring programs will contribute to the project through supporting coordination and organization at different levels and also will be the end-user of the project as an international organization.

References

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Fig. 1. Study area and sampling site for Mytilos project.

Caging method enables to control the age and sexual condition of samples. Mytilos/Mytimed/Rinbio methodology is based on the computation of a condition index for every location. Using this condition index, a correction is applied to raw data in order to get homogeneous and comparable contaminant concentrations. The field methodology and data management has been thought in order to limit interferences with effects of trophic level on bio-accumulation. Using this method at a large scale allows to get data independent from physicochemical and trophic variability of study sites.

Considered contaminants : Trace metals (Lead, Cadmium, Copper, Mercury, Zinc, Chromium, Nickel, Arsenic, Organic compounds (PCBs, Dioxins, PAH, DDTs, Hexachlorocyclohexan, Detergents, Bromine compounds).

Exploitation of results will be performed through an Internet site with an