

## **BLUE MUSSELS AND PACIFIC OYSTERS IN BELGIAN COASTAL HARBOURS AS TEST ORGANISMS FOR ENVIRONMENTAL STRESS**

Rappé Karen and Vincx Magda

Ghent University, Biology Department, Marine Biology Section, Campus De Sterre,  
Krijgslaan 281 / S8, B-9000 Gent, Belgium

E-mail: [Karen.Rappe@UGent.be](mailto:Karen.Rappe@UGent.be)

Harbours receive, as semi-enclosed structures, high loads of chemical substances through river inputs, direct discharges (oil spills) as well as by indirect ways such as shipping traffic, atmospheric deposition, wastewater, etc. This means that organisms living in harbours are exposed to a wide range of pollutants which have the potential to cause stress by disturbing the normal functioning of the biological organisation.

As part of the INRAM project, in which the risk of micropollutants is studied for the Belgian coastal zone, a cage experiment with mussels and oysters was conducted in the harbour of Zeebrugge and in the Sluice dock of Oostende to study the susceptibility of these bivalves to the prevailing stress.

The cage experiment ran over a period of five months, from June 2007 till October 2007. Mussels (*Mytilus edulis*) and oysters (*Crassostrea gigas*) collected in a subtidal area of the Eastern Scheldt were transplanted to cages at four stations: outer harbour of Zeebrugge, inner harbour of Zeebrugge, Sluice Dock in Oostende and one at open sea. Mussels were sampled monthly, oysters bimonthly. Growth, condition index and gonad development were recorded. Soft tissue was saved for concentration measurements. Abiotic parameters were recorded fortnightly.

First results show significant differences in growth and condition index between the sites. The shell length increment and condition indices show a significant decrease according to a spatial gradient from outer harbour towards inner harbour, towards the sluice dock.

The experiment allows an evaluation of the existence of biometric differences between the different sampling stations. In the near future a possible correlation with the body burdens will be studied.