

REPAMO : a French network for the surveillance of molluscs health

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OIE Reference Laboratory for bonamiosis and marteiliosis

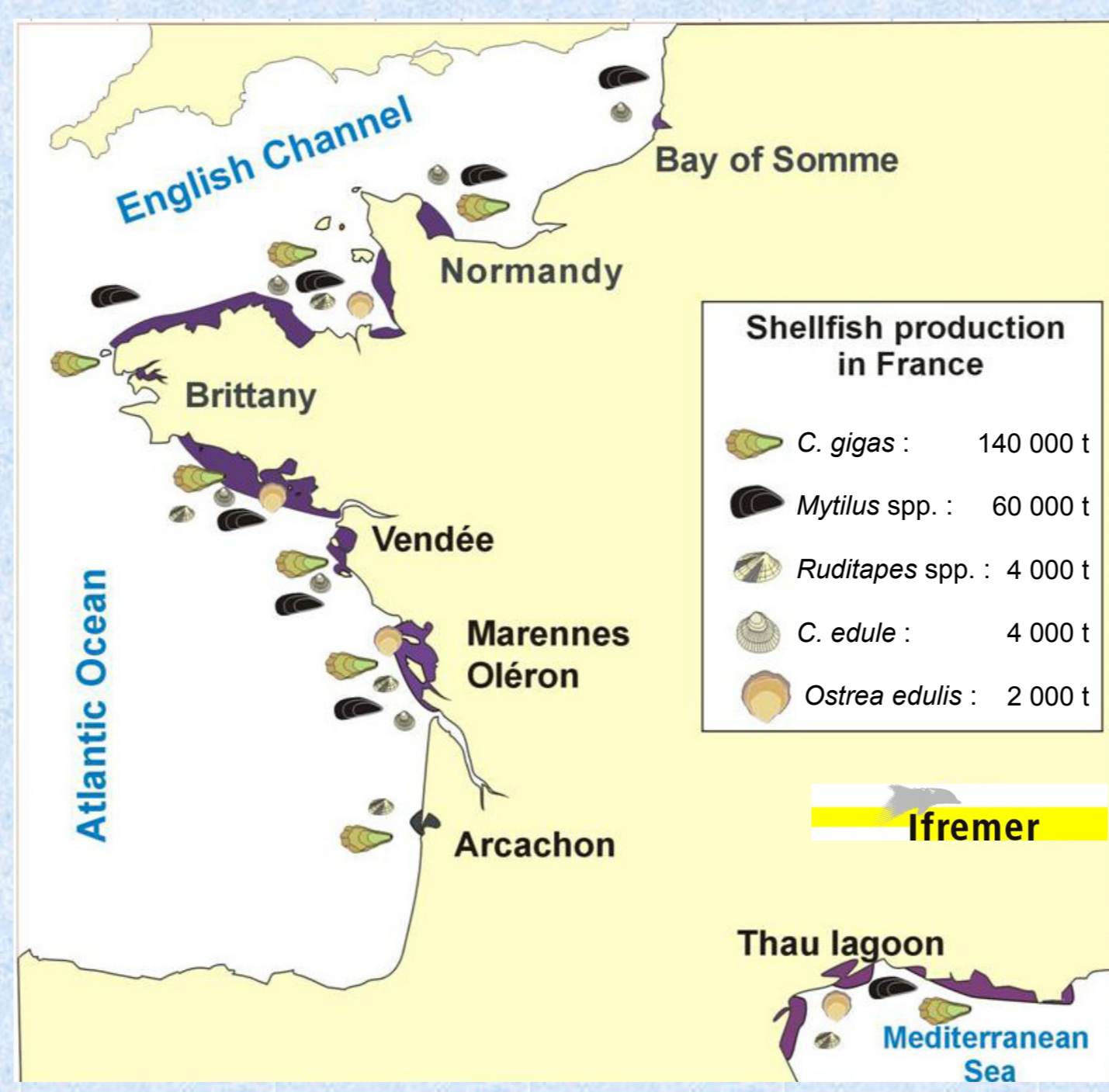
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Réseau de PATHologie des MOLLusques :

Created in 1986 by Ifremer (Institut français de recherche pour l'exploitation de la mer), Repamo is a network dedicated to the surveillance of Molluscs health on the French coasts.

France is the 2nd largest shellfish-producing country in Europe, with over 200 000 t/year.

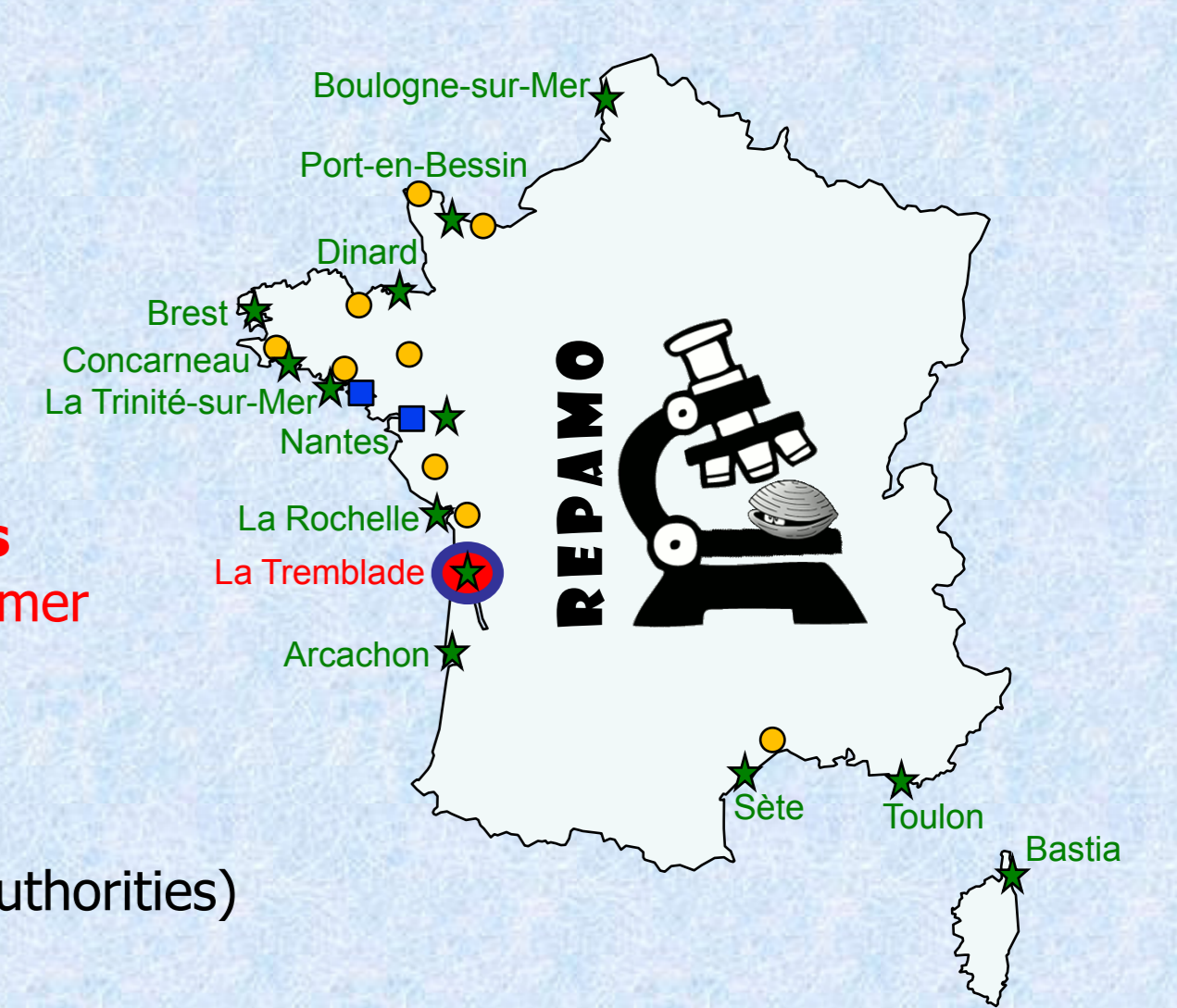
The missions of the network are : ① the surveillance of listed diseases present in France, ② the study of abnormal mortality and ③ the surveillance of the health status of farmed and wild populations of molluscs.



Repamo participants :

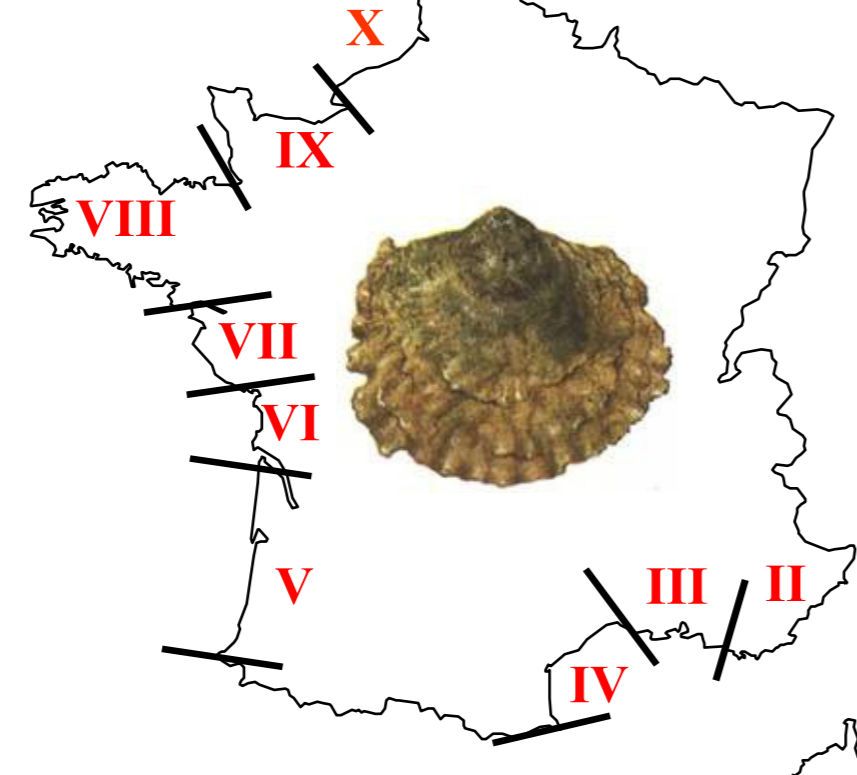
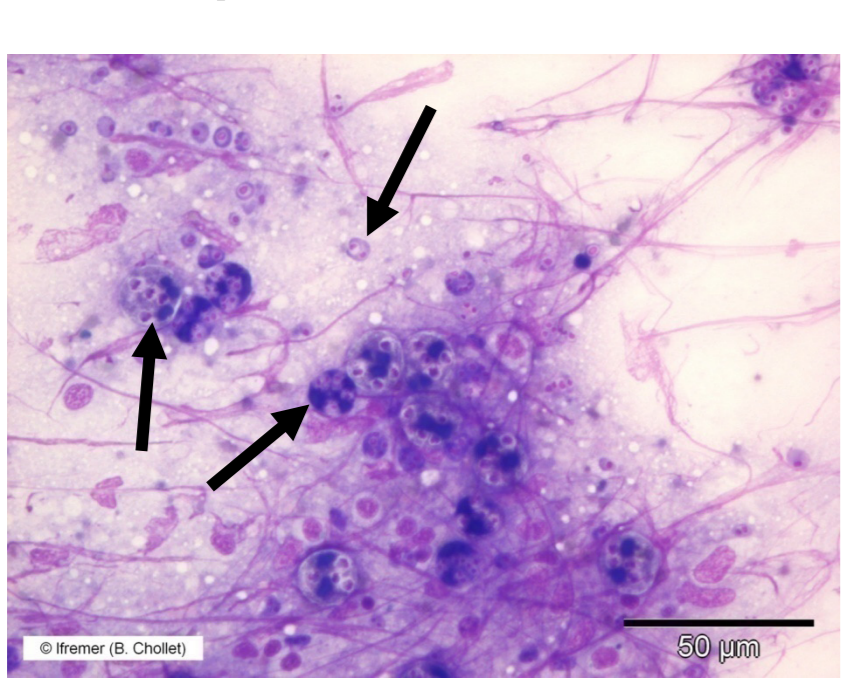
Ifremer, shellfish farmers, authorities & laboratories.

- ★ Repamo correspondents : 19 Ifremer agents in 13 locations
- Administrators of Repamo database : 2 Ifremer agents
- Repamo coordination : 1 Ifremer agent
- NRL/EURL – Molluscs Genetics & Pathology Laboratory : 35 Ifremer agents
- Network partners :
 - - 9 accredited laboratories
 - Marine Affairs (local competent authorities)
 - Shellfish farmers



① Surveillance of bonamiosis and marteiliosis (active surveillance)

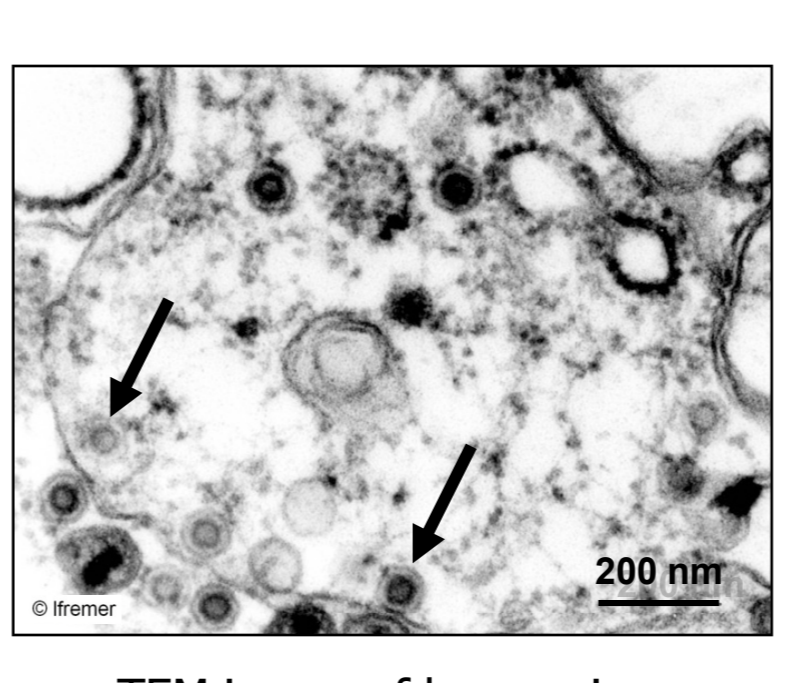
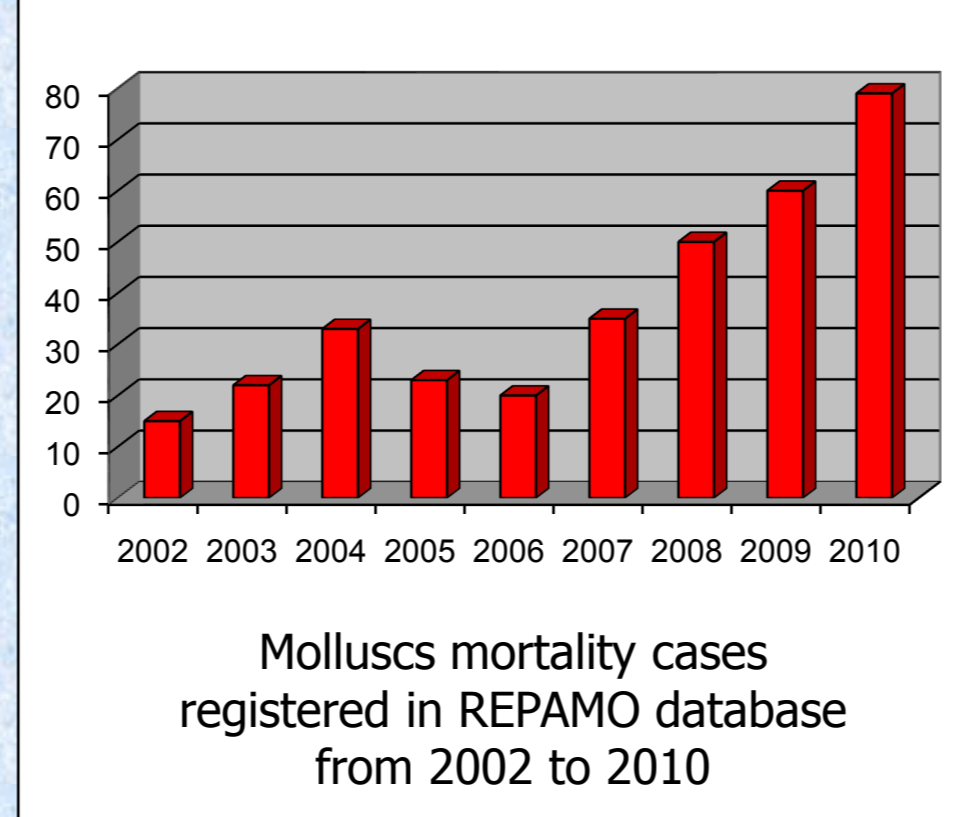
Objective : surveillance of two non-exotic parasites (*Bonamia ostreae* & *Marteilia refringens*), listed in Directive 2006/88/EC and the OIE Aquatic Animal Health Code.



Zoning : the French ten zones have been approved by Decision 94/722/EC.

② Study of abnormal mortality (passive surveillance)

Objective : to confirm or turn down an infectious hypothesis when mortality occurs.

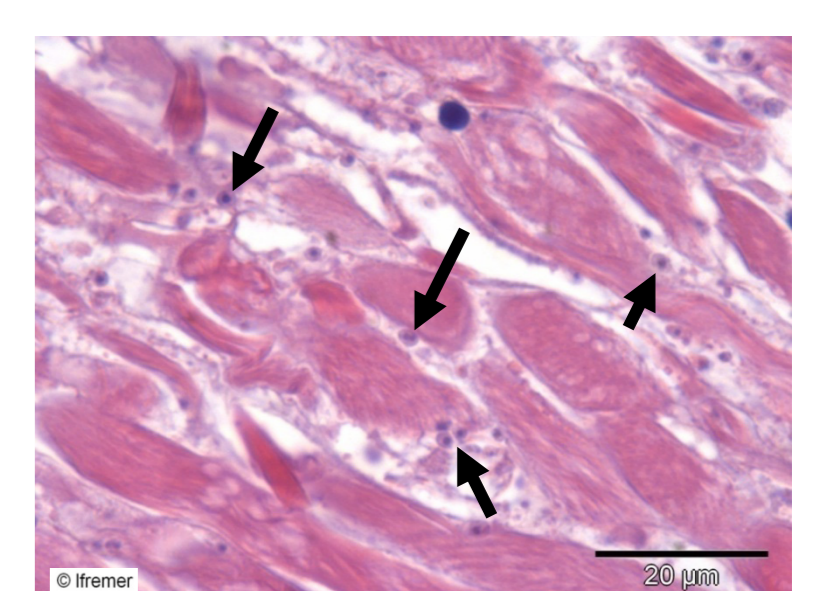
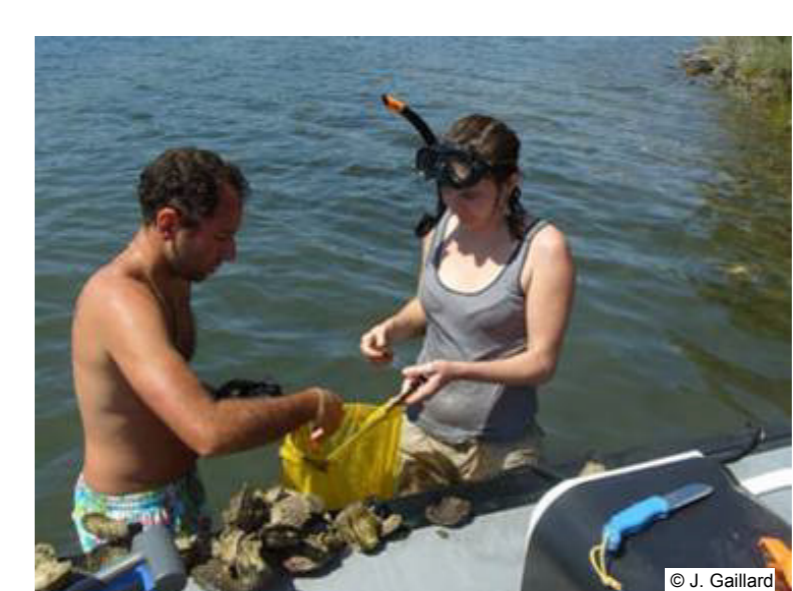


Mortality cases registered by Repamo have dramatically increased since 2002, most specially since the beginning of the Pacific oysters mortality outbreaks in 2008.

③ Surveillance of the health status of farmed and wild molluscs (active targeted surveillance)

Objective : to collect information on selected host-pathogen couples, outside crisis situation.

2008-10 : *Bonamia exitiosa* in *Ostrea edulis*



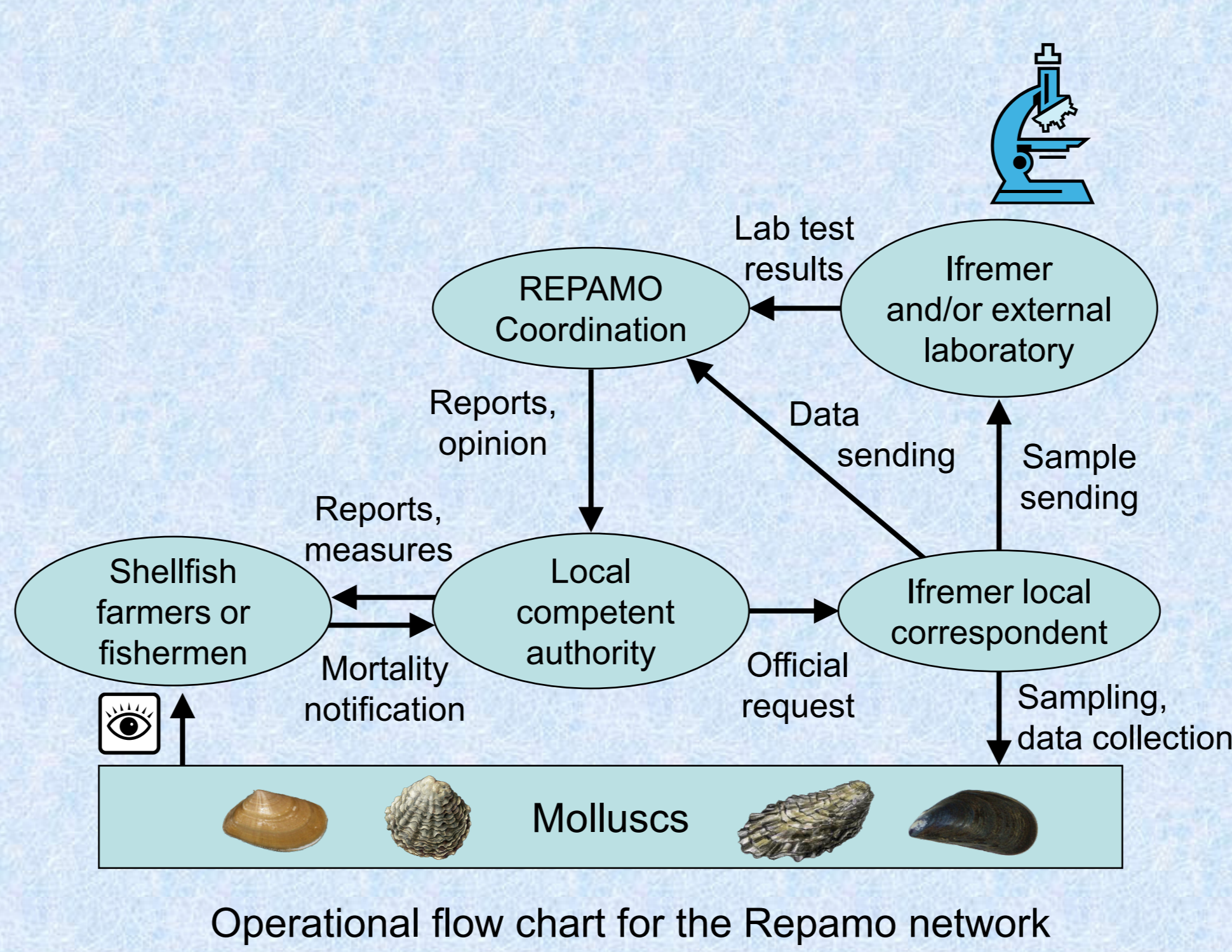
2011-13 : *Mikrocytos* like in *Donax trunculus* and *Nocardia crassostreae* in *Crassostrea gigas*

Sampling and diagnosis :

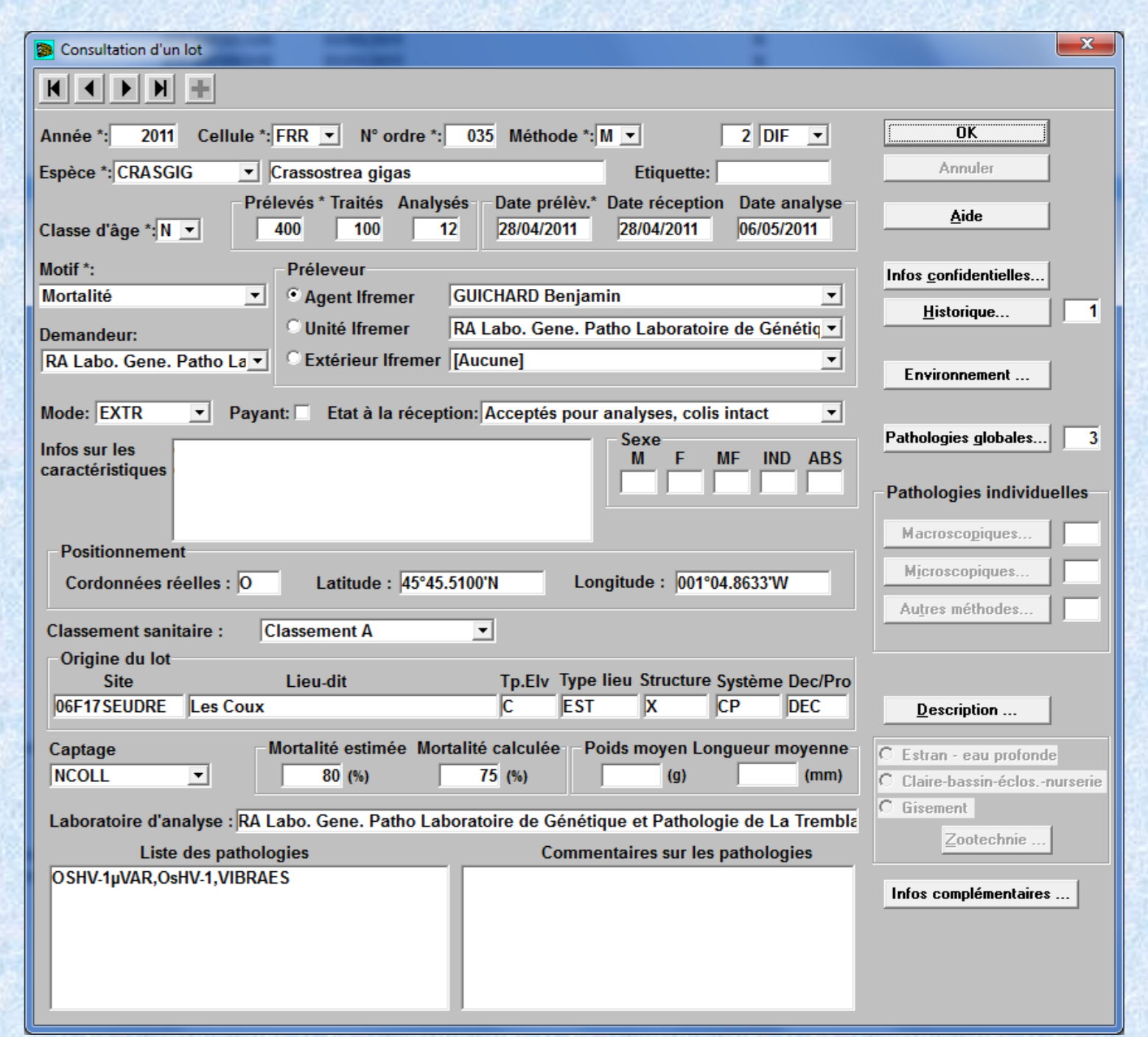
- The sampling strategy is based on the recommendations of the OIE Manual of Diagnostic Tests for Aquatic Animals. Repamo correspondents are in charge of collecting information and samples.
- Samples are tested either at the Molluscs Genetics & Pathology Laboratory or in external accredited laboratories (9 in 2011), using reference diagnostic methods. The choice of the appropriate methods relies on the context, the pathogens species and the shellfish age.



Pacific oysters sampling by Repamo correspondents



Operational flow chart for the Repamo network



Batch window in the Repamo database

Repamo database : every data regarding sampling and tests are recorded in a specific and confidential database.

Relationships with the competent authority and shellfish farmers :

- The Repamo database provides synthetic reports with different levels of details for the competent authority and shellfish farmers. Results of the surveillance are also available in various formats : annual report, Repamo annual meeting, intranet and internet (www.ifremer.fr/repamo) websites.
- Repamo activities are adapted every year in coordination with the competent authority, according to regulation, scientific knowledge and socio-economical context.

Repamo is a flexible surveillance tool :

- to comply with European and national regulatory requirements
- to study the impact of pathogens already present and to survey their evolution
- to bring a better knowledge on Molluscs diseases present in France