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# FOREWORD

Bivalve diseases are one of the critical bottle necks causing important and recurrent losses in bivalve culture. In some cases, the presence of infectious pathogens has caused the complete destruction of bivalve culture as it occurred to the flat oyster (*Ostrea edulis*) in Europe.

Research on bivalve diseases has relied mainly on histological techniques and has been mostly focused on pathogen morphology and ultrastructure, effect of external factors on pathogens or infectivity, and on the development of immune and molecular diagnostic techniques. Recently, specific PCRs have been set up for the most important bivalve pathogens being more sensitive than traditional techniques such as histology.

Although critical advances have been reported in the last years on bivalve diseases, increased efforts should be done on several aspects:

- Set up of low cost, efficient and sensitive diagnostic methods.
- Search for no so "evident" pathogens. Why are there so few viral bivalve pathogens?
- Pathogenicity studies of identified organisms.
- Mortality studies at the culture places.
- Effect of pathogens on bivalve immune system.

In recent years, several antimicrobial peptides have been described in bivalves on the basis of their biochemical structure and biological activity. Could they be used as quantitative criteria in selection programmes? Which is their role in defense against infections? Could bivalves be used as production systems of "interesting molecules"?

A future exciting research is in front of us. Now, more than ever, the need to develop multidisciplinary international research, involving as many research groups working on shellfish pathology as possible, is more than evident.

I would like to thank all contributors to this *ALR* issue for their effort and enthusiasm in discussing these and other interesting ideas related to this expanding research field.

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