



DIPNET

Disease interactions and Pathogen exchange between farmed and wild aquatic animal populations – A European Network

The Challenge

Over the past three decades, European aquaculture has expanded, intensified, and diversified. The total number of species reported under culture within the European region has more than doubled during the last thirty years. Farming of new species and expansion of aquaculture into new regions is associated with profound changes of the species and population structure of aquatic ecosystems. In many of these ecosystems wild fish and shellfish are in close contact with their farmed cousins, and the potential for exchange of pathogens (to the disadvantage of either sector) is inevitable and raises a number of important issues relating to its control.

Farming creates a favourable environment for the transmission and expression of disease through high stocking densities and other stressors. Thus infection of micro-organisms that may cause no clinical disease in wild populations may result in new diseases emerging in farmed aquatic animals. Likewise, introduction of new species for restocking and aquaculture purposes can be a threat to wild population.

Aquaculture is recognised by the EU to significantly improve the socio-economic situation of coastal communities and its sustainable development is supported. The Commission services have therefore identified the need for scientific support in order to further develop the Union's policy to:

- control and reduce the impact of diseases in wild aquatic animals and ecosystems;
- reduce constraints that diseases impose on sustainability of European aquaculture;
- prevent and respond to new, emerging or re-emerging, diseases threatening either sector.

Project Objective

The principal objective of DIPNET is to integrate and strengthen the current scientific knowledge on the potential transfer of pathogens and diseases between wild and cultured aquatic animal populations, and thereby to support to the development of European policies protecting the health of wild aquatic animal populations while allowing responsible use of the aquatic environment for aquaculture purposes.

Key Points

- To strengthen the current scientific knowledge on transfer of pathogens and diseases between wild and cultured aquatic animal populations.
- To give scientific advice to support the development of European policies.
- Network building and dissemination of current knowledge towards knowledge users, other stakeholders and the wider European public.



Aquainnova

www.eatip.eu

EATiP Thematic Area of Relevance

TA1: Product Quality, Consumer Safety and Health

TA2: Technology and Systems

TA3: Managing the Biological Lifecycle

TA4: Sustainable Feed Production

TA5: Integration with the Environment

TA6: Knowledge Management

TA7: Aquatic Animal Health and Welfare

TA8: Socio-Economics and Management

Key Words

Disease, Pathogens, Aquaculture, wild populations, farmed animals

Project Information

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Output Highlights

A European Review of disease interactions

Fifty two authors and more than 100 experts have contributed over two years to provide a comprehensive assessment of disease interactions and pathogen exchange between farmed and wild aquatic animals. In total, the scientific review comprises 82 disease chapters with a very comprehensive bibliography of scientific articles pertaining to the subject.

The available information is presented and discussed in four main sections, following an ecosystems approach, each scenario representing the situation in various parts of Europe:

- **The North Atlantic scenario** - Disease interactions between coastal net-pen aquaculture and migrating wild fish populations
- **The continental European scenario** - Disease interactions between freshwater resident wild fish populations and traditional (pond) aquaculture
- **The Mediterranean scenario** - Disease interactions between wild marine fish populations and Mediterranean sea cage aquaculture
- **The shellfish and crustacean scenario** - Disease interactions between wild and farmed shellfish and crustaceans

Furthermore, an extensive report on **risk assessment and modelling of pathogen exchange** was produced, and a review of current activities and methods for fish disease epidemiology was conducted (and a corresponding seminar organised). DIPNET equally focused on network building and knowledge dissemination.

The Full Report:

For a comprehensive description of the research project and copies of the reports, visit www.revistaaquatic.com/DIPNET/

Next Steps – Suggested Actions/Follow On



Policy

- DIPNET aimed to develop a proposed policy implementation plan (PIP), with recommendations and suggestions for follow-up on national and European level and based on good management practices and public regulations needed to ensure the responsible exploitation of aquatic living resources and the preservation of biodiversity.



Knowledge Transfer

- DIPNET produced a scientific review of current knowledge in the field, stimulating the exchange of knowledge and scientific opinion, and identifying needs for future research and management action. All of which are essential issues related to the development of policy and legislation both on European and national level.

Related Publications/Projects

A list of publications produced during the project can be found on the project website, visit www.revistaaquatic.com/DIPNET/