Surveillance of Emerging Infectious Diseases (EIDs) in wildlife and farmed bivalves from Campania Region

Francesca Carella[1], Lorenza D'Angelo[1]*, Fabio Di Nocera[2]
*Lead presenter: lorenza.dangelo@unina.it
1. *Department of Biology, University of Naples Federico II, Via Cinthia Complesso di Monte Sant Angelo, Naples, Italy*
2. *Istituto Zooprofilattico Sperimentale del Mezzogiorno, Portici, Italy*

The expanding international wildlife trade, combined with a lack of surveillance for key animal diseases in most countries, represents a potential pathway for transboundary disease movement. Marine diseases can have far-reaching effects on population, community and ecosystem health; however, our ability to track, predict and manage these diseases has, historically, been poor. As a result, the fields of disease ecology and epidemiology have developed at a slower pace for marine than terrestrial systems. Emerging infectious diseases (EIDs) are impacting both natural and farmed bivalve populations in the Mediterranean Sea. In Campania Region, shellfish disease has been reported mostly in farmed mussels and in natural populations of oysters and clams. Recently, the WHOA listed Perkinsosis was reported in the new mussel host, caused by *Perkinsus olseni* (Carella F, et al., 2023). Following that discovery, in collaboration with the local IZS del Mezzogiorno, a survey was performed along Campania coasts in 11 mussel farms from October 2022 to July 2023, reporting seven positive farms, with *P. olseni* 97–100% identity with species from Uruguay and New Zealand (Carella et al., 2026). Recently, un unknown Haplosporidian parasite (*Haplosporidium* sp.) was reported in the Mediterranean mussel *Mytilus galloprovincialis* both in Croatia and Northern Adriatic.

As a part of a continuous plan of immunosurveillance conducted by the laboratory of aquatic animal disease, Dept. of Biology of Federico II of Naples, in the Campania region and in collaboration with other countries, a histopathological and molecular study is ongoing to define the potential presence of *Haplosporidium spp* in mussels farms and the health status of *Solenidae* local population (*Ensis* spp.), which have been recently decreased. Synergistic efforts across animal health, ecology, and risk assessment may provide a more comprehensive understanding of the relative risks of various types of transmission pathways, and in identifying risk mitigation strategies.