

AdriAquaNet

Enhancing Innovation and Sustainability in Adriatic Aquaculture

Deliverable WP 2.2.5

Technical-scientific report on WP4 (final)

Trieste, 30.06.2022

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| WP leader: | PP2 - University of Trieste |
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This is a **synthetic overview** of the main innovations that AdriAquaNet Partners have developed to attain **Objective 2 of the project - Promote fish health and provide “healthy and safe” fish to consumers.**

The relevant activities have been comprised in **WP 4 – R & I TO IMPROVE HEALTH AND SUSTAINABILITY IN AQUACULTURE**

This Workpackage has been organized in 3 main parts:

- Act 4.1 VACCINE PRODUCTION AND VACCINATION STRATEGIES
- Act 4.2 THERAPEUTIC SUBSTANCES/PROBIOTICS/ MARINE NATURAL PRODUCTS
- Act 4.3 WELFARE MONITORING

The **detailed scientific and technical reports of WP4** are available in the project’s website, section **Docs and Tools**, sub-section [WP 4 – R & I TO IMPROVE HEALTH AND SUSTAINABILITY IN AQUACULTURE](#)

These documents will support aquaculture professionals following the scientific and technological development of new vaccines and vaccination strategies against *Tenacibaculum maritimum* and *Vibrio harveyi*, new natural and eco-friendly compounds from medicinal plants and marine organisms with antibiotic, antiparasitic and immunostimulant properties. These scientific and technological developments are of primary importance to replace synthetic antibiotics in the control of fish diseases. Moreover, the project has developed easy, rapid and effective methods to safely assess the fish health and welfare, so as to ensure quick decisions and apply remedial measures in farms, avoiding important economic losses.

Deliverables of Activity 4.1 are:

- D.4.1.1 Autologous “tailor-made” vaccines against *Tenacibaculum maritimum*
- D.4.1.2 Autologous “tailor-made” vaccines against *Vibrio harveyi*
- D.4.1.3 Brochure on the vaccination strategy in hatchery/farm

Deliverables of Activity 4.2 are:

- D.4.2.1 Technical-scientific Report on efficacy of naturally extracted pyrethrins on the fish and parasites
- D.4.2.2 Technical-scientific Report of the fish microbiome, probiotic candidates and the effect of feeding trials on the fish growth and immunity
- D.4.2.3 Standardized protocol for the in vitro and in vivo evaluation of new substance effectiveness in fish
- D.4.2.4 Patent application on drug candidates

Deliverables of Activity 4.3 are:

- D.4.3.1 Technical-scientific Report on OWI applicability
- D.4.3.2 Manual for use on field Operational Welfare Indicators (OWI)
- D.4.3.3 Manual for use on field of a “bivalent monitoring tool”

The technical innovations described in these reports have been **disseminated via training events**, as reported in D.4.4.1 TRAINING FOR VETERINARIANS AND SMES.

The target groups of this document are:

SMEs and professionals active in the aquaculture value chain

They may find it useful to know what technologies are available and who are the reference persons who can support them in implementing these innovations.

Researchers and scientists addressing manifold issues of aquaculture sustainability by a multi-disciplinary approach

They may find it useful to understand what are the most urgent innovation needs of the aquaculture business, in order to transfer knowledge and ideas from their scientific domains to the applied sciences.

Policy makers at all levels of government

The seamless adoption of these innovations and any other necessary improvement, refinement and further development need to be supported by the public policy makers at all levels of government, in order to design and implement actions that ensure favorable conditions of cooperation between relevant actors of the innovation endeavor, such as the R&I sector (Research and higher education institutions) and the users (SMEs) at both sides of the Adriatic Sea basin.

European policy framework

This document reflects the collective effort of the AdriAquaNet project partnership to tackle concrete issues relevant for the aquaculture value chain, in line with the [Common Fisheries Policy \(CFP\)](#). It is clear that the AdriAquaNet objectives perfectly overlap with those of CFP, which are [to increase productivity, to stabilise the markets, to provide a source of healthy food and to ensure reasonable prices for consumers](#).