

Trieste, 30th August 2021

PARTICIPATION OF ADRIAQUANET TO ONE Conference



HEALTH • ENVIRONMENT • SOCIETY

21-24 JUNE 2022, BRUSSELS AND ONLINE

Organised by European Food Safety Authority, with 4 other sister European Authorities and the European Commission-Joint Research Centre



Premise

EFSA is organising the ONE Conference (<https://www.one2022.eu/>) a high-level event to address issues around food safety and sustainability.

Issues are structured in 4 pillars, including the pillar said **One planet**, which includes 4 themes. One of these themes is **Animal welfare and the search for sustainability** (<https://www.one2022.eu/abstracts/one-planet/animal-welfare-and-the-search-for-sustainability>):

Sustainability is considered to be composed of three conceptual pillars: economic, social and environmental. Farming systems are under pressure to reduce their environmental impact, but must remain economically viable and be socially acceptable. There are growing societal demands for animal production systems to be more sustainable, safeguarding both the environment and the welfare of animals. We need to produce animal-sourced food with improved animal welfare and less environmental impact. The Farm to Fork initiative and the One Health ambition recognise that there is a need to improve farmed animal welfare, which in turn will lead to an improvement in animal health, reducing the need for medication, helping to preserve biodiversity and raising the quality of food. However, it is not yet known how to deliver sustainable food animal production systems, nor how to measure progress towards this goal and what compromises might have to be made along the way. In this session, **we will examine the relationship between animal welfare and sustainability in the various animal husbandry systems, describing challenges and potential solutions.** Also, we will consider sustainability **assessment tools** that have been developed **to gain insight into the sustainability performance** of animal husbandry systems, including animal welfare, with a view to assessing their potential future role in regulatory science.

This Conference may be a WP2.4 high-level event where results from our project may be presented, if our abstract will be accepted.

The Conference is hybrid (on site and online), which may ease our participation.

Below is an abstract draft, which I bring to the attention of the LP and the WP Leaders.

Deadline for abstract submission: 15 September 2021

AdriAquaNet Abstract draft

Title 200 characters including spaces

AdriAquaNet-Enhancing Innovation and Sustainability in Adriatic Aquaculture 76 *char*

Authors 500 characters including spaces

Marco Galeotti, Sabina Passamonti, Emilio Tibaldi, Snjezana Zrncic, Jelka Pleadin

Others?

Introduction 1200 characters including spaces

Farmed fish is a growing source of protein-rich food. While aquaculture grows globally, knowledge about welfare of farmed fish is lagging. Yet, animal welfare is at the core of the food supply sustainability, since fish diseases stem from poor environmental conditions, antimicrobial resistance, and altogether this results in bad food quality and the subsequent consumer mistrust. It urgent to have a systematic and long-term commitment to define parameters of farmed fish welfare. To address this issue in the area of the Adriatic Sea, a community of Croatian and Italian researchers and aquaculture SMEs have joined their forces in the AdriAquaNet project, funded by the cross-border cooperation programme Interreg Italy-Croatia 2014-2020. The project is addressing the innovation needs of the “fish farm”, the “fish doctor”, and “the fish market”, the 3 main segments of the aquaculture value chain. Fish farms in the Adriatic Sea supply high-quality products that are exported globally or intensively demanded locally during the summer touristic waves. Having a well-managed aquaculture sector is clearly essential for the local economy and the consumer trustiness. 1170 *char*.

Methodology 1200 characters including spaces

The AdriAquaNet community gathers expert researchers in aquatic biology and veterinary medicine, both in academia and in applied research centers. Since long they had focused on goals relevant for the industrial sector. Thus, some fish farms have joined the community, offering their expertise and facilities to field trials.

The core approach for improving farmed fish welfare has been to bring technological innovations into fish farms, such as: a) new feeds made of alternative protein sources (e.g., insects), supplemented with probiotics that protect against gut diseases; b) new vaccines and vaccination protocols against pathogens; and c) new natural drugs. The impact of these innovations on fish welfare has been assessed by gathering data needed for both framing the intervention mode of action (i.e., gene expression, histology, hematology, gut microbiota, and biochemistry) and for defining animal welfare monitoring end-points (i.e., Operational Welfare Indicators, growth, nutrient composition, sustainability index). In the One-health perspective, other datasets have been gathered on both environmental quality (climatic and ecotoxicology indicators) and nutritive parameters of food. *1199 char.*

Results 1200 characters including spaces

Our data series show that fish fed new diets plus probiotics have the same sustainability index and nutritive properties as conventional feed. However, probiotics supplementation changed the intestine gene expression pattern towards a low inflammation state and improved barrier against gut pathogens, raising the expectation of increased innate resistance to gut pathogens. Vaccination against *Vibrio harveyi* ...

to be completed

Discussion 1200 characters including spaces

to be written