NATIONAL INSTITUTE FOR MARINE SCIENCES AND TECHNOLOGIES (INSTM)

Application of a photocatalytic remediation system for the grow-out of gilthead seabream

Sparus auarata

(RAS sea water system)

The INSTM Aquaculture laboratory is composed by two teams, the Marine Fish Production Unit and the Pathology of Aquatic Organisms unit.

The marine fish production unit will perform:
- Set up of the photocatalytic remediation system along the RAS
- Zootechnical parameters: Growth and well-being
- Evaluation of filters efficiency

The Pathology of Aquatic Organisms Unit will evaluate the following parameters on sea bream:
- Health parameters: Growth, immune and stress gene expression
- Water parameters: Physical, chemical, and microbiological characterization
- Ammonia, nitrite, and nitrate concentrations to verify the system efficiency
- In-vitro evaluation of TiO2 nanoparticle against the major microbial pathogens
- In vitro evaluation of the antimicrobial effects of the TiO2 powder and antibiotic degradation

NAME	DEPARTEMENT	BREIF DESCRIPTION
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Dr. Sami Zaafrane 	Aquaculture Laboratory Pathology of Aquatic Organisms unit B.P 59 - 5000 Monastir	Graduated in Biological Sciences. PhD in Microbial Ecology. In aquaculture context, he has been interested in the adaptation of bacteria to marine ecosystems, and the treatment and recycling of water in aquaculture. He has also investigated in the relationship between aquaculture and the environment in its physicochemical and bacteriological effect on the water column and sediment. Additional research has been conducted on aquatic bacteria, particularly the antibiotic resistance in fish pathogens. E-mail: sami.zaafrane@instm.rnrt.tn
Dr. Kaouthar MAATOUK 	Aquaculture Laboratory Pathology of Aquatic Organisms unit 28 Rue de 2 Mars 1934. Salambo. Tunis	Doctorate in Medicine veterinarian. Diagnosis and control of aquatic fish pathology in fish farms Microbiological diagnosis Studies of emerging diseases. E-mail : maatoukk@yahoo.fr
Dr. Rim El Jeni 	Aquaculture Laboratory Pathology of Aquatic Organisms unit 28 Rue de 2 Mars 1934. Salambo. Tunis	Graduated in Biological Sciences. PhD in Biotechnology-Microbiology. In terms of aquaculture biosecurity, she has worked on various projects related to aquatic microorganisms, including beneficial bacteria isolated from fish, antimicrobial activities against pathogenic bacteria, and viruses.

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Dr. Nadia Chérif 	Aquaculture Laboratory Pathology of Aquatic Organisms unit 28 Rue de 2 Mars 1934. Salambo. Tunis	Gradutaed in Microbiology, PhD and HDR in fish virology. Her research concerns the major diseases within farmed fish. Her activities guarantee regular survey and evaluation of the zoo-sanitary situation of the partner farms and assist them in putting prophylactic practices in term of biosecurity measures and supporting the integration of the public private partnership (PPP) initiative in the aquaculture sector. E-mail: nadia.cherif@instm.rnrt.tn