

Current Challenges in the Norwegian Salmon Aquaculture: Are Cleaner Fish a Solution?

著者	BLANCO GONZALEZ Enrique
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1-1. **Current Challenges in the Norwegian Salmon Aquaculture: Are Cleaner Fish a Solution?**

Enrique BLANCO GONZALEZ

Norwegian College of Fisheries Science, UiT-The Arctic University of Norway, Tromsø N-9037, Norway

Norway leads the world aquaculture Atlantic salmon (*Salmo salar*) production with 1.2 million tons a year and a value of approximately 800 billion JPY. However, salmon lice infestation remains a major challenge for the industry which is continuously evolving towards mitigating the sea lice problem. A broad range of approaches have been tested, and nowadays the use of cleaner fish is recognized to be the most economic and environmentally friendly option. This biological treatment is expected to be the most important lice treatment over the next years and the industry is moving towards self-sufficiency fostering selective breeding programs. Here, I will present the most pressing challenges in this context and introduce an innovative approach, RACleanFish-Aqua. This approach proposes a paradigm shift for cleaner fish culture, moving from “selection” to “diversification” by incorporating key broodstock management procedures recommended for stock enhancement programs into the protocols for cleaner fish aquaculture production. This new approach is foreseen to provide a continuous supply of cleaner fish to the salmon farms and ensure the sustainability of the wild populations, while minimizing putative risks of introgression in case of fish escapees.



Enrique BLANCO GONZALEZ (E-mail: enrique.blanco@uit.no)

Associate professor at the Norwegian College of Fisheries Science, University of Tromsø in Norway. Dr. Blanco Gonzalez is interested in combining genetics and ecological approaches to understand fundamental questions in marine ecology, fisheries and aquaculture. He intends to deepen into the adaptive fitness of marine organisms to environmental, anthropogenic and evolutionary forces. Over the last years, his research has focused on stock enhancement and translocation on several marine species in Japan, Norway and Chile.