FISH FARMING: BETTERING THE BEST

Amid increasing scientific research, the Aquaculture Research Station of the Faroes looks to unleash live lumpfish to fight sea lice and analyze what happens to fish farms once placed offshore—meanwhile planning to export salmon eggs.

Surveying a Faroese fish farm; Managing Director Kristian Petersen (below); Lumpfish—Cyclopterus lumpus (bottom rigt); Lab technician Sólvá Samuelsen (opposite).

SOME BLAME the current ENSO (El Niño–Southern Oscillation) cycle for the unusually bad weather experienced in the Faroe Islands of late. Whatever the case, the conditions are giving the Faroese ample opportunity to find out whether their fish farms are robust enough to withstand extreme winds, waves and currents.

"We've had a constant onslaught from a southeastern direction for weeks and months on end," said Kristian Petersen, managing director of Fiskaaling (Aquaculture Research Station of the Faroes) in February 2014. "This has translated into bad conditions at sea with the result that some of our field work has been delayed."

Already, the Faroese aquaculture industry is well known for having successfully adapted to extreme weather and marine conditions. Yet ambitions to expand and increase production to meet growing international demand for what is considered possibly the best farmed salmon available has triggered a quest to move fish farms further out to sea to gain more space.

Operational drawbacks and risks could be involved, especially with regard to access during rough seas. Thus of note among current research and development efforts are projects aimed at investigating the effects—on fish as well as equipment—of placing fish farms offshore.

Mr. Petersen said: "Some of our R&D projects focus on investigating the implications of placing fish farms offshore, thereby increasing exposure to weather, waves and currents; another focus area concerns the problem of parasites and how to combat the common sea lice using live cleaner fish as a natural antidote.

"These are examples of what we do together with the aquaculture industry to help fish farmers meet present and future challenges."

On one occasion in early 2014 the wave height reached a staggering 10.7 meters, according to Mr. Petersen. The trial equipment nonetheless has remained intact. As for the fish, these will be introduced into the offshore cages after one year of data recording and analyses.

The problem of sea lice, meanwhile, is costing Faroese fish farmers serious amounts of money every year in hydrogen peroxide for delousing—not counting related use of personnel and time expenditures.

A more sustainable solution could be underway, though.

"The industry has decided to work jointly in combatting this problem and at Fiskaaling we are looking into the potential use of lumpfish in this connection. R&D projects have considered how to optimize this possibility, for example by distinguishing effective fish individuals from non-effective ones through DNA analyses."

A natural predator of sea lice, lumpfish—if deployed successfully—promise a smooth way of minimizing the problem of the parasite by reducing its population significantly and keeping it in check.

"The next phase is live testing on a fairly large scale," Mr. Petersen said. "This spring [2014] we are planning to release 20,000 individuals into a fish farm as part of our lumpfish research program."

EGGS IN DEMAND: Fiskaaling has long played a pivotal role in the development of the Faroese aquaculture industry, and continues to do so with a growing number of R&D projects under its belt.

Since the time of the Faroe Islands' early ventures into aquaculture back in the 1960s, Fiskaaling's efforts have been central to laying the groundwork for what is today a thriving fish farming industry. With a growing number of research and PhD projects, Fiskaaling has become one the Faroe Islands' foremost research organizations.

Atlantic salmon eggs from the Faroe Islands, meanwhile, are in high demand internationally, so much so that Fiskaaling has identified this as an export opportunity. Attempts to achieve the required health status for Faroese salmon eggs, however, have to date been scuttled in a wall of bureaucracy, according to Mr. Petersen.

"It's quite a frustrating story," he said. "Look, we're blessed with practically having no health issues whatsoever in the Faroese aquaculture industry and yet we've been struggling to be given our clearance status for this. We're obviously in a more healthy state than most other salmon producing countries; but the EU's testing and documentation requirements in this area appear to be rather excessive and seem to reward countries for their capability of playing the paperwork game rather than actually having healthy farmed fish. Now, we have managed to fulfill those requirements but the EU authorities claim they haven't received our application yet. So we are keen on following this through—there is, after all, a huge demand for our salmon eggs."

Fiskaaling

Aquaculture Research Station of the Faroes
Við Áir, FO-430 Hvalvík

www.fiskaaling.fo
fiskaaling@fiskaaling.fo
Tel.: +298 47 47 47
Fax: +298 47 47 48

Managing Director: Kristian Petersen

Fiskaaling — Aquaculture Research Station of the Faroes — seeks to provide an active research environment in order to improve the knowledge base and help ensure the quality of aquaculture.

In our focus on international research we collaborate with other research institutions, domestic and foreign, and work closely with the fish farming industry.

Examples of current projects:

- Proteoglycans (PGs), glycosaminoglycans (GAGs) and collagen in the connective tissue of fish muscle;
- The effect of fish protein/peptides on blood pressure;
- Controlling plankton production in basins/ponds;
- Genetic studies of Faroese cod stocks;
- Open ocean fish farming;
- Quality of aquaculture products and feeds;
- Resuspension of sediments impacted by fish farm wastes.