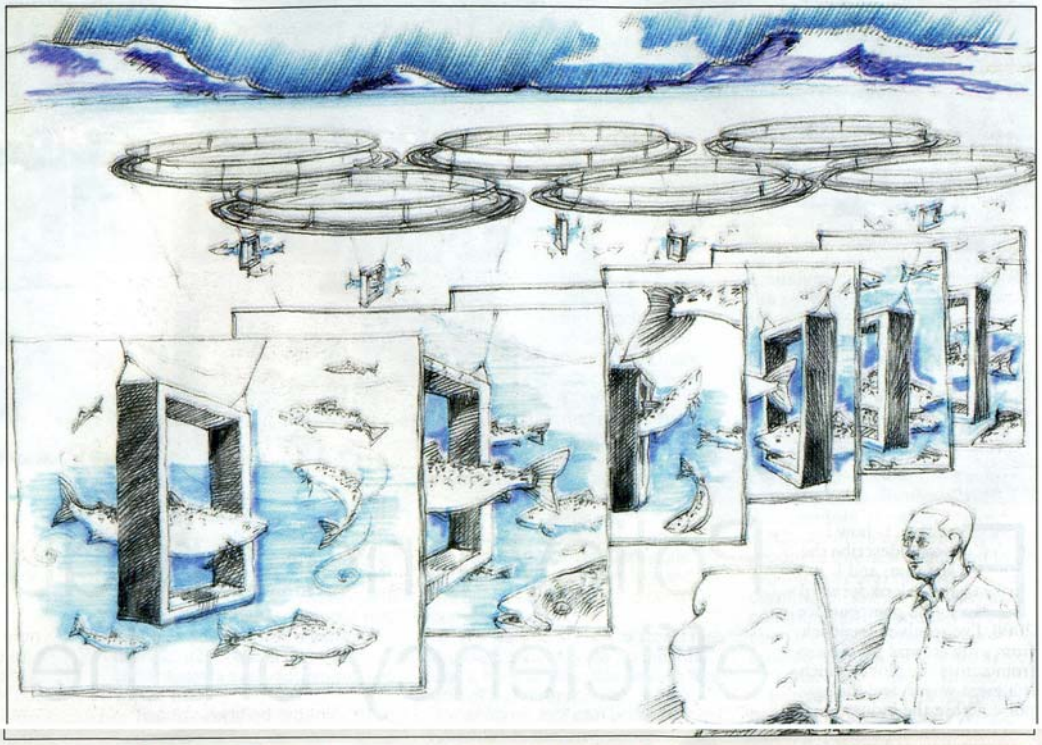
Predicting harvest weights to within 1%

– system trialled by Marine Harvest



A NEW system allowing salmon harvest weights to be predicted with more than 99% accuracy has been introduced by Marine Harvest Scotland.

Working in conjunction with Iceland-based Vaki, Marine Harvest has implemented the Biomest daily system into 150 of its cages, covering about five million fish each day. The system takes a real-time picture of the size and distribution of fish in each cage, allowing for continuous monitoring of pens for harvest. This monitoring can be done remotely, and provides up-to-the-minute information on harvest weights.

"The beauty is in the continuity," says Tony Boyd, harvest planning manager with Marine Harvest Scotland. "I've got the information on my screen and so does my manager. We are able to match every pen better to every order."

The system also shows growth trends, helping managers to see if an unusual result is simply that or part of a larger pattern.

But the biggest key to efficient planning is the accuracy. At the time of writing, one harvest had been completed using the new Biomest Daily system and, according to Boyd, it was accurate within "far less" than 1%. "It's early days," he says. "But it looks good."

Improving FCRs

"One of our biggest challenges is feed conversion ratios [FCR]," explains Ben Hadfield, Marine Harvest Scotland's sea water production manager, based in Fort William. This ratio needs to be as low as possible for cost issues, but also for sustainability.

"Our targets are extremely challenging," says Hadfield, who has been working at Marine Harvest Scotland for eight years. "We are looking to lower production costs in Scotland as we know we have stiff competition in a global market." Each farm also has individual production targets.

Ben Hadfield, Marine Harvest Scotland's sea water production manager

Top and right: Vaki's Biomest system takes a real-time picture of the size and distribution of fish in each cage

Inventory control using Vaki's system is one of a raft of measures introduced by Marine Harvest to improve these FCR ratios. Accurate knowledge of the salmons' size, number and weight enables the company to ensure its products are growing at a healthy rate and consuming the right quantity of feed. With feed the main production cost, any efforts to reduce the current level of 2% waste are very beneficial.

Marine Harvest is investing around £200,000 ($295,136) per year in Biomest Daily and if results from the trial are as expected, the project will be implemented across all of Marine Harvest's farms.

More than 50% of Marine Harvest's salmon is sold to contract so it is important that the company's size forecasting is accurate in order to supply the customer with what they want.

Says Tony Boyd, harvest planning manager: "We don't want to be harvesting fish we haven't sold."

Marine Harvest, the world's largest producer of farmed salmon, produces about 320,000 tonnes of salmon annually, about 10% of that in five hatcheries, four freshwater farms and 23 sea farms found in Scotland.

'Almost perfect'

IN DECEMBER, Donald MacDonald, assistant manager of Marine Harvest's Loch Leven farm will be harvesting his 400,000 salmon.

Once a month MacDonald samples his fish by hand, checking their health and ensuring that the 600kg of food devoured daily is being used properly. But, with the installation of the new Biomest Daily system, this year the busy December harvest has functioned a little differently.

"Last Friday we harvested 600 fish and the estimates were 20 to 30g out. That's almost as good as being perfect," says MacDonald. "It's absolutely fantastic for what we do. If it continues to be that accurate it's going to be a brilliant system."

Info improves sales planning

THE accuracy of Vaki's system allows users to compare growth models with the actual fish being farmed. "Customers also use the average weight, distribution and growth to optimise their husbandry practices, including feeding and grading, as well as providing solid ground for maximising revenues with good harvest and sales planning. This information is critical for cost control as it facilitates efficient feeding and planning for the processing factory," explains David Jarron, Vaki's area marketing manager.

Vaki plans to integrate information from Biomest Daily into all its Vaki systems. "We also plan to have a unified and continuous flow of information to fish farming companies on fish size, weight distribution and numbers in all stages of the production cycle."