



New Zealand King Salmon has employed NMIT aquaculture student Michael Scott to carry out the daily husbandry of the fish in the trial tanks. Image: NIWA



Image: NIWA

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SIL project promises economic and environmental gains

A series of trials to improve the feed conversion ratio of farmed king salmon will improve economic return and environmental impact, say project leaders.

New Zealand King Salmon (NZKS) is working with the Cawthron Institute, Seafood Innovations Ltd (SIL) and international salmon feed companies on the \$5.2million research programme to ascertain the optimal diet.

NZKS Fish Health Manager Mark Preece says the SIL funding has allowed for science specific to the species. “Coupled with our world-leading classical breeding programme, this research will ensure we are doing our absolute best to meet the nutritional requirements of our salmon, resulting in the best possible eating experience for our customers.”

There has been a great deal of research into the optimal diet for

Atlantic salmon, but little for king salmon, which makes up less than half a percent of the world’s farmed salmon, says Mark.

Upon receiving SIL support for trials in 2014, the company and Cawthron worked with salmon feed experts around the world to come up with two diets they believed would be nutritionally superior, based on knowledge of king salmon and of the Atlantic salmon diet.

“We asked our feed companies to manufacture those diets and then trialled them in optimal water temperatures of 16°C for the first trial. In the second trial, which was completed in October, we used 19°C water, which represents the most challenging summer temperature in the Marlborough Sounds.”

In the 16°C trial, tests have shown a 6 percent improvement in feed conversion ratio (FCR), while the 19°C trial indicated an 8 percent improvement, he says. “The improvements will reduce the amount of feed we use from smolt to harvest, improving both the economic and environmental outcomes.”

The best trial diet has already been put in place on NZKS’s Marlborough Sounds sea farms, in order to improve fish performance. The third trial will

began in November, in order to further refine the diets.

The project, run at Cawthron’s Aquaculture Park in Nelson, uses nine tanks, with the new diets trialled in six tanks of around 70 fish each, and a commercial diet run in the final three tanks.

Cawthron project leader Kevin Heasman says the trials have made good progress, but still have some way to go. “It’s one of those things where each time we do a trial and learn something we can compare it to the previous trial we have done. The more we do, the more we have to compare and therefore the more gains we make.”

Over the next two years of the programme he will run between six and eight additional trials. That work will have a “significant” impact on the future of salmon farming in New Zealand, he says.

“For every bit of improvement we can implement in terms of the FCRs, and understanding of the digestibility of the various ingredients within diets, the more we can improve the quality of the fish, the economics of growing the fish to a final product and the speed to which you get them to harvestable size, all the while maintaining the sustainability of the product.” 🐟