Attention Keith Heather
Marlborough District Council
Via Email
29 October 2008

Hi Keith,

Thanks for your email of 23 October 2008 copied below:

"Hi Dorje have you received the NIWA reports yet?
The exact staging is not very clear, take it the trial will proceed as follows;
Stage 1 1000 kg biomass,
Stage 2 2000 kg total (inc the first 1000 kg)
Stage 3 3500 kg total (inc the first 2 1000kg)
But presumably you will be harvesting on the 16 to 20 month cycle so how does this effect the above?
What is the projected feed conversion rate, and what is the max annual feed weight for each stage.
Not to happy about hand feeding to satiation it's a bit loose and while it is probably OK in the early stage overfeeding would cause unecessary adverse effects and unecessary cost to yourselves. Have a look at the NZKS system where they monitor with cameras below the fish and as soon as uneaten food passes through they stop feeding.

Cheers

Keith Heather
khe@marlborough.govt.nz "

Most of the answers to your queries are in the NIWA report of Assessment of Effects. An electronic copy will be sent at the same time as this letter.

Staging
This is set out clearly in the report in Appendix 3 table 11.2 Staged Production (page 82)

Feed Conversion
Expected feed conversion ratios:
up to 1.2kg fish 1.2
1.2kg- 3kg fish 1.6

Max annual amount of feed for each stage is given on page 82.

Maximum production parameters for the proposed fish farm are shown on table 11.1 on page 80.

Parameter	Maximum quantity
Stocking biomass	150t
Stocking density	15kgm-3
Area covered by farm	1.5ha
Annual production	155t(in the 4th year)
Maximum feed input	255t

Feeding

The intention is to maximise food conversion efficiency by careful management of feeding, feed costs will be the single highest cost with this experiment. As well as reducing cost feeding management, is of course, important for good environmental outcomes.

Only fingerlings will initially be fed by hand 4-6 times per day to satiation. Older fish will be fed 2-3 times per day.

Different feeding methods may be trialed during the course of the experiment.

This farm is a small experimental farm so a simple but effective feeding system is preferred. It is likely that using hoppers with a spreader will be an effective method. Feeding will be monitored by video feedback. A similar system is described in New Zealand King Salmon's application for resource Consent for their farm at Clay point - section 7.4 of U060926 August 2006.

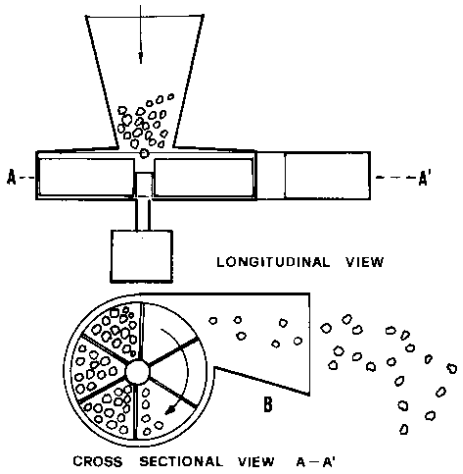
A basic feeding program based on fish numbers, size, season etc will be developed this will then be fine tuned using on the water results.

A typical feeding operation will operate as follows:

1. The operator will manually turn the feeder and camera on, time will be noted.
2. Feeding will be monitored visually via an underwater video camera, once pellets are seen dropping past the camera the feeder will be turned off.
3. Feeding duration and amount of feed pellet given recorded.

Feedback from operators on feed rates daily will allow the basic feeding program to be adjusted. Seasons, temperature, weather conditions etc will alter feeding rates. Careful recording of these relationships will be an important part of this experiment.

<u>Diagram of feeder type: Hopper/spreader</u>



1. The feed falls from the hopper on to a disc which is rotated by an electric motor at intervals to eject a portion of feed. The motor also releases the feed from the hopper on to the disc by operating a valve. The feed can either be released directionally, using the guide shield 'B' or, if the latter is removed, throughout a 360 angle.
2. Feed will be delivered to the central portion of each cage. This will discourage feeding activity from the outside of the cage.
3. During feeding the feed pellets are monitored visually by a camera placed in the centre of the pen.

Note that Sealord proposes to monitor the effects of the site, including benthic effects, as discussed in section 5 of the NIWA AEE.

Please let us know if you would like further clarification on these or any other things in the application.

Yours Sincerely

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