

SENSORY QUALITY OF ATLANTIC SALMON (S. SALAR) FED NO FISH MEAL– NO FISH OIL DIETS

Grethe Rosenlund, Gunvor K. Baardsen, Ingunn Stubhaug, May-Helen Holme

e-mail: grethe.rosenlund@skretting.com

Skretting ARC, Sjøhagen 3, 4016 Stavanger, Norway

An ultimate goal in the farming industry is to become independent of fish meal and fish oil in aquafeeds. In recent years, commercial diets without fish meal have become available, but complete substitution of fish oil has been difficult due to lack of alternative sources providing the long-chain n-3 fatty acids (LC n-3 FA) required by salmon during the grow-out phase (Rosenlund et al., 2016). However, with the current developments of new oil sources rich in LC n-3 FA, this can change.

The aim of the present study was to test the effects of feeding diets containing no fish meal and no fish oil on performance and product quality of Atlantic salmon. Triplicate groups of fish of ~1kg were fed 3 different diets till they reached a harvest size of ~6 kg. The trial was conducted at Skretting ARC Lerang Research Station in 3 m tanks supplied with flow through seawater at 12°C. Two test diets containing no fish meal were added two levels of algal oil (Veramaris®) as a source of EPA and DHA, at either 2-4 % or 8-15 %. The control diet contained 15 % fish meal and 7.5-12.5 % fish oil to mimic typical commercial diets (Norway) for salmon of similar sizes. At the end of the growth trial some fish were sent to Nofima AS (Ås, Norway) for sensory evaluation of raw and cooked fish. The sensory tests were carried out by a trained panel consisting of 11 judges according to ISO 13299:2016. Fish were scored on a scale from 1 (low) to 9 (high) using the software EyeQuestion and EyeOpen® (both Logic8 BV, Wageningen, The Netherlands) for attributes related to appearance, smell, flavour and texture.

Growth was good (Relative Growth Index ~100 %) and similar independent of diet. Sensory evaluation of raw and cooked salmon showed no, or only minor, differences between groups. Thus, that Atlantic salmon can be fed diets without fish meal and fish oil for most of their grow-out period in sea without negative impact on performance and product sensory characteristics.