

Title: The effect of protein and lipid source in feed for organic rainbow trout on sensory quality

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Abstract

The aim of this work was to study which effects protein and lipid source in feed for organic rainbow trout (*Oncorhynchus mykiss*) may have on the sensory quality of the final product by varying the duration of storage on ice. The protein sources used in the experiment were fishmeal and a mixture of vegetable protein meals. The lipid sources were fish oil and oil from linseed, sunflower, rapeseed and grape seed, respectively. After slaughtering all fish were frozen (-40°C) until the sensory experiment was performed, for which the trout were thawed and stored on ice for 3, 5, 7 and 14 days, respectively. The sensory experiment included objective sensory profiling of heat treated samples. The sensory panel consisted of 11 assessors who all were tested and trained in descriptive analysis of rainbow trout.

After 3 days of storage on ice an effect of lipid source was observed. Inclusion of linseed oil resulted in a sensory profile comparable to the use of fish oil in the feed. This was in contrast to some of the other vegetable oils, especially grape seed oil which resulted in a sensory profile distinctly different from the trout fed on fish oil. However, this difference observed after 3 days of storage did not appear after a prolonged storage time of 5 days on ice and consequently no differences in the sensory characteristics were observed. After 7 days on ice some of the sensoric differences reappeared i.e trout fed on rapeseed or grape seed oil had a more neutral flavour and odour compared to the other trout. After 14 days of storage the protein source had an effect. As the trout on a fishmeal diet were more tainted than the other trout, it was observed that the shelf-life was increased by feeding the fish with vegetable protein compared to fish meal. The conclusion of the experiment therefore was that both

dietary vegetable protein and lipid sources influenced the sensory characteristics of trout stored on ice.