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APPARENT DIGESTIBILITY OF ASTAXANTHIN IN ATLANTIC SALMON (*SALMO SALAR*) AND RAINBOW TROUT (*ONCORHYNCHUS MYKISS*). EFFECT OF SPECIES, TEMPERATURE, SALINITY AND DIETARY PIGMENT LEVEL

G. Struksnæs, G. Baardsen, Ø. Ron and W. Koppe

Nutreco Aquaculture Research Centre AS, P.O. Box 48, N-4001 Stavanger (Norway).
E-mail: Gunvor.Struksnaes@nutreco.com

Introduction

Flesh pigmentation in salmonids is dependent on species (Storebakken et al., 1996), dietary concentration of carotenoids, fish weight and time of feeding (Berkebile et al., 1990; Torrissen et al., 1995), amongst others. The majority of experiments investigating factors influencing pigmentation of salmonids have been conducted on rainbow trout. The present study was undertaken to study the effect of dietary pigment level and water temperature on apparent digestibility of astaxanthin (ADCax) in Atlantic salmon and rainbow trout and to investigate the effect of salinity on ADCax in trout.

Materials and methods

Atlantic salmon (mean weight 40 g) and rainbow trout (mean weight 560 g) were fed identical diets containing three different dietary levels of astaxanthin (18, 38 and 55 mg/kg) in duplicate tanks. Salmon were held in seawater either at 8 or 12°C, while trout were held in both seawater and freshwater at the same two temperatures. Fish were overfed for 13 days; one pool of pieces samples from approximately 20 fish were collected in duplicate from each tank for determination of apparent digestibility of astaxanthin (ADCax). Diethyl ether was used as an inert marker.

Results

Preliminary results showed that ADCax was higher in rainbow trout than in Atlantic salmon, (figure 1).

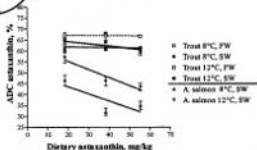


Fig. 1. Apparent digestibility of astaxanthin as a function of dietary astaxanthin. Continuous lines show regression curves for salmon and trout in seawater. Dotted lines show regression lines for trout held in freshwater.

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