

Results also show a higher digestibility at 12°C than at 8°C for Atlantic salmon in seawater and rainbow trout in fresh water. Results indicated that ADCax was higher in freshwater than saltwater for rainbow trout at 12°C, whereas no difference was found at 8°C. Further, an inverse relationship between ADCax and dietary astaxanthin concentration was apparent for Atlantic salmon whereas this was less pronounced for rainbow trout. Results from this experiment and others in progress will be presented.

Discussion and conclusion

The observed species differences in ADCax in this experiment may at least partly explain that rainbow trout utilise dietary carotenoids more effectively than Atlantic salmon with respect to flesh pigmentation (Storebakken et al., 1986) and that the plasma response to dietary astaxanthin in rainbow trout is greater compared to Atlantic salmon (March and MacMillan, 1996). The higher ADCax at 12°C than at 8°C in the present experiment is in accordance to results obtained on fillet pigmentation in rainbow trout comparing 15°C and 5°C, (No and Storebakken, 1991a). No and Storebakken (1992) found that carotenoid accumulation was not systematically different in trout reared in freshwater and saltwater. However, results from the present study and others in progress show that ADCax in rainbow trout is higher in freshwater compared to seawater.

Further research to elucidate the factors influencing the digestibility of astaxanthin could increase the knowledge on how to improve the utilisation of dietary pigments in salmonids.

References

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