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## RESEARCH REPORTS

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**Title:** The Effects of Feeding on Muscle Growth Dynamics and the Proliferation of Myogenic Progenitor Cells during Pike Perch Development (*Sander lucioperca*)

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**Abstract:** The effects of feeding on the development and growth of pike perch muscle and on proliferation of their progenitor myogenic cells were evaluated. Larvae were fed starting on Day 5 after hatching with *Artemia nauplii*, two commercial diets (Aglo Norse [AN] and Biokyowa [BK]), and two formulated diets (C [nonhydrolyzed casein] and CH [25% casein hydrolysate]). The survival, body mass, and length of pike perch juveniles fed *Artemia nauplii* and AN and BK diets were significantly higher compared to the C and CH groups. The highest somatic growth rate was associated with an increased contribution of hyperplasia to white muscle growth. Significantly higher frequency of proliferating cell nuclear antigen- and Ki-67-positive nuclei in the white muscle of fish fed *Artemia nauplii* and commercial diets compared to those fed C and CH feeds indicates that feeding affected the number of fibers. The pike perch fed the CH diet exhibited significantly lower total cross-section area and average fiber area, additionally to the pathological changes in muscle morphology. The larvae fed natural food and diets promoting a fast growth rate exhibited a higher contribution of hyperplasia to muscle growth, which in turn, promoted an increase in the body size of adult fish.

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