

EFFECT OF DIFFERENT RATIOS OF DHA, EPA AND ARA ON ONTOGENY OF DIGESTIVE ACTIVITIES AND LARVAL DEVELOPMENT OF PIKEPERCH LARVAE (*SANDER LUCIOPERCA*)

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Pikeperch (*Sander lucioperca*) is recognized as one of the main freshwater species with a great potential for the expansion of the EU aquaculture industry. Little is known about the nutritional requirements of pikeperch, especially during the early larval development. However, recent studies suggested requirements similar to those of marine carnivorous fish larvae for both phospholipids and long-chain polyunsaturated fatty acids (LC-PUFAs) (Hamza et al. 2015, Lund et al. 2017). The ratio among dietary fatty acids, such as eicosapentaenoic (EPA), docosahexaenoic (DHA) and arachidonic (ARA) acids constitutes a critical factor for broodstock and larvae performance (Bell and Sargent, 2003, Izquierdo, 2005) due to competitive interaction among them. Hence, regardless of the need to study the optimum absolute dietary values for LC-PUFAs in this species, optimum dietary ratios must be defined. In a recent study, a significant interaction between EPA+DHA and ARA has been found in pikeperch larvae fed different LC-PUFAs, vitamins and minerals, suggesting the importance of a balanced n-3 LC-PUFAs/n-6 LC-PUFAs ratio in pikeperch (El kertaoui et al. 2017). In this sense, the present study was conducted to investigate the effects of different dietary DHA/EPA/ARA ratios on pikeperch larval development and performance.

Larvae were fed *Artemia* nauplii enriched with DHA Protein Selco (INVE, Dendermonde, Belgium) until they reached 14 day post-hatching (dph), followed by a co-feeding period from 15 to 17 dph using *Artemia* nauplii and a mixture of the experimental diets. Six experimental diets with two levels of DHA (low and high levels) and three levels of EPA/ARA (1:1, 2:1 and 4:1) were provided in triplicates to 18-dph larvae. The results will report on final survival and growth rates calculated at the end of the experiment, after a 21-day experiment. Assays of digestive enzymes (pepsin, trypsin, amylase, aminopeptidase, alkaline phosphatase and leucine alanine) will be performed. Biochemical analysis will be conducted focusing on larval fatty acid composition. Besides, histological study of bone ossification will be conducted to determine the effects of LC-PUFAs ratio on the incidence of skeletal deformities.

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