



Effect of bioactive products on innate immunity and development of Atlantic halibut (*Hippoglossus hippoglossus* L.) larvae

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Abstract

Halibut larvae were treated with various bioactive products and the effects on selected components of the innate immune system investigated. Effects on growth, survival and normal development of larvae were also studied. The bioactive products which were tested were chitosan and protein hydrolysates from cod, blue whiting and pollock. The larvae were treated with bioactive products from the onset of feeding or from 4-5 weeks after the onset of feeding and throughout the first feeding period. The products were either added to the environment of the larvae, to the environment of the live feed or incorporated into the fatty acid mixture used for enrichment of the live feed. High mortality rates of larvae are commonly observed during the first weeks in feeding and previous research indicates that this may be partly caused by high bacterial numbers or the composition of the bacterial community. The specific immune response is not fully developed until after the first feeding period, thus, innate immune responses are of great importance. The overall results indicate that treating larvae with fish protein hydrolysates through the live feed resulted in stimulation of the innate immunity of first feeding halibut larvae. However, the treatment did not lead to improved growth or survival of larvae during the first feeding period.

Keywords: Halibut larvae, innate immune response, IgM, C3, lysozyme, fish protein hydrolysates, chitosan

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