

The effect of Kilka protein hydrolysate (*Clupeonella cultriventris*) and *Lactobacillus plantarum* on biochemical and immunity parameters of trout (*Oncorhynchus mykiss*)

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Abstract

The increased resistance of bacteria to commercial antibiotics has increased the attention to use immunostimulators to incitement the innate immune system. In this study, the effect of Kilka (*Clupeonella cultriventris*) protein hydrolysate (KPH) and lactobacillus plantarum were evaluated on the biochemical and immunity parameters of *Oncorhynchus mykiss*. For this purpose, fish with an average weight of 35 ± 3.5 g were fed with selective treatments for 60 days. At the end of the period, some biochemical and immunity indexes such as lysozyme, total protein, albumin, ALT, AST and IgM

were studied. The results showed that fish fed with probiotic *L. plantarum* plus 10% KPH had better results and the values of the above parameters were 50, 6.7, 3.40, 9.3, 20.25, and 9.75 respectively. According to the results, it is recommended to use combination of probiotic and protein hydrolysis in trout diet to increase the biochemical and immunity parameters.

Keywords: *Oncorhynchus mykiss*, Kilka protein hydrolysate, *Lactobacillus plantarum*, biochemical and immunity parameters