

**The effect of Kilka protein hydrolysate (*Clupeonella cultriventris*) and  
*Lactobacillus plantarum* on growth performances of *Oncorhynchus mykiss*  
Reza Safari<sup>1\*</sup>, Abdollah Jafari<sup>2</sup>, Abdolhamid Azari<sup>3</sup>Ehteram sadat Alavi Tabari<sup>4</sup>, Hassan  
Molaei<sup>5</sup>**

1, 2, 3-Caspian Sea Ecology Research Center (CSERC), Iranian Fisheries Science Research Institute (IFSRI),  
Agricultural Research, Education and Extension Organization (AREEO), Sari, P.O. Box 961, Iran

\*Corresponding author g-mail: safari1351@gmail.com

**Abstract**

Due to the increased bacterial resistance to common antibiotics and also the high cost of ration protein sources increased the tendency to use probiotic and alternative protein sources in the diet to improve growth performance and stimulate the immune system. In this study, the

effect of dietary foods containing probiotic *Lactobacillus plantarum* alone and along with 10 and 20% Kilka protein hydrolysate were evaluated on growth indices of *Oncorhynchus mykiss*. For this purpose, fish with Mean ( $\pm$ SD) weight of  $35 \pm 3.5$  g were raised for 60 days and feeding with selected. At the end of the trial, growth factors including BWI, FCR, SGR and PER were determined in different groups and compared to one another. Results showed that *O. mykiss* fed on diet supplemented with *Lactobacillus plantarum* + Kilka protein hydrolysate 10% had significantly higher growth factors compared to other treatments ( $P < 0.05$ ). Thus, using this supplement at *Lactobacillus plantarum* + Kilka protein hydrolysate 10% form as growth promotor was recommended in *O. mykiss* diet to decreasing the final cost of trout feed.

**Keywords:** *Oncorhynchus mykiss*, Kilka protein hydrolysate, *Lactobacillus plantarum*, growth indices.