

Enrichment *Nereis diversicolor* using probiotic bacteria *Bacillus* and *Lactobacillus* and its effect on the growth parameters and survival of *Acipenser baeri* fingerlings

Esmail Farzaneh¹
Hossein Khara^{*2}
Zabiyollah Pajand³

1. Department of Fisheries,
Guilan Science and Research
Branch, Islamic Azad University,
Rasht, Iran.

2. Department of Fisheries,
Lahijan Branch, Islamic Azad
University, Lahijan, Iran

3. International Sturgeon
Research Institute, Rasht, Iran

*Corresponding author:
h.khara1974@yahoo.com

Received date: 2017/01/22

Reception date: 2017/07/27

Abstract

This study was carried out to investigate the enrichment capability of *Nereis diversicolor* with bacillus and lactobacillus probiotics used as live food on the growth and survival of *Acipenser baerii* fingerlings. In this study, bacillus and lactobacillus probiotics which are soluble in oil were used by solving one gran of probiotic in 10 ml sunflower oil. At the end of experiment the fingerlings obtained the mean weight of 21.5 ± 1.3 g and three fingerlings were selected randomly from each treatment and their replicates and transferred to the lab for biometry operations and determining the microbial flora of intestine. The final results revealed significant statistical differences in the final biomass, percent of weight increase, condition factor, specific growth rate, and the mean daily growth and food conversion ratio among the treatments and control group. Results showed, the total Bacteria in *Nereis diversicolor* increased in all treatment groups and the least total bacteria was observed in the control. Based on the one way analysis of variance, the total bacteria in the intestine of *Acipenser baerii* fingerlings enriched with probiotic showed significant differences in all treatments in MRS culture medium ($P < 0.05$). Results showed, showed that the total bacteria of treatments didn't show an increasing trend and total the bacteria in treatment two was more than those of treatment three, and the least was observed in control group and there were significant differences between the treatments and the control group ($P < 0.05$). The comparison of the mean total bacteria in the intestine of *Acipenser baerii* with *Nereis* intestine revealed that the total bacteria in the intestine of *Acipenser baerii* were more than those of *Nereis diversicolor* intestine. The results also showed that the total bacteria of *Nereis diversicolor* intestine in treatment three was more than the other treatments, but the total bacteria in the intestine of *Acipenser baerii* fingerlings were more in treatment two, compared to the other treatments.

Keywords: *Acipenser baeri*, *Nereis diversicolor*, Enrichment, Probiotic, Growth, Survival.