Effects of dietary prebiotic xylooligosaccharide on growth and feeding performance, hematological indices and non-specific immune response of sobaity (*Sparidentex hasta*) fingerling

Vahid Morshedi [1]
Naser Agh [*2]
Jasem Marammazi [3]
Farzane Nori [4]
Takavar Mohamadian [5]

1. PhD Student of Aquaculture, Urmia Lake Research Institute, Urmia University, Urmia, Iran
2. Department of Aquaculture of Urmia Lake Research Institute, Urmia University, Urmia, Iran
3. South Iranian Aquaculture Research Center, Ahvaz, Iran
4. Department of Aquaculture of Urmia Lake Research Institute, Urmia University, Urmia, Iran
5. Department of Aquatic Health of Faculty of Veterinary, Shahid Chamran University, Ahvaz, Iran

∗ Corresponding author:
agh1960@yahoo.com

Received date: 2015/06/14
Reception data: 2015/09/15

Abstract
The aim of this study was to evaluate the effects of xylooligosaccharide on growth and feeding performance, hematological factors and non-specific immune response in Sobaity (*Sparidentex hasta*). For this purpose, 425 individuals of sobaity fingerlings were prepared with an average weight of 7.64 ± 0.3 g from the Mariculture Research station of the South Iranian Aquaculture Research Center. This study was carried out in a completely randomized design with three treatments and replications (45 fish per each replication) in fiberglass tanks having 300 liters volume. Fish were fed with diet containing 0, 0.5 and 1 percents of xylooligosaccharide at 4.5 percent of body weight for a period of 42 days. At the end of the experiment, blood, plasma and mucus samples were collected for estimating the immunological (plasma total Ig, plasma lysozyme activity, plasma complement activity and plasma, mucus bactericidal activity) and hematological (hemoglobin, hematocrit and red and white blood cells count) parameters. The obtained results indicated that dietary xylooligosaccharide did not change sobaity growth and feeding performance including final weight, final length, specific growth rate (SGR), condition factor (CF), feed conversion ratio (FCR), protein efficiency ratio (PER) ($P > 0.05$). The results of this study indicated that different levels of prebiotic did not affect non-specific immune response and white blood cells count. But, hemoglobin, hematocrit and red blood cells count showed significant differences between the control group with the treatments 0.5 and 1 percents of xylooligosaccharide ($P< 0.05$). Overall, this study showed that hematological factors were affected by dietary prebiotic. Nonetheless, the diet supplemented with 0.5 and 1 percents of xylooligosaccharide had no significant effects on the non-specific immune response and growth performance of sobaity.

Keywords: Xylooligosaccharide, Innate immunity, Growth performance, Hematological factors, Sobaity (*Sparidentex hasta*).