



Using supernutrients for eliminating of antibiotics in diet of juvenile Siberian sturgeon (*Acipenser baerii*)

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Abstract

This study was carried out to determine and compare the effects of dietary super-supplements and antibiotics on some physiological and growth parameters in juvenile Siberian sturgeon (*Acipenser baerii*) with an average initial weight of 680.89 ± 29.93 grams and 63.79 ± 1.18 cm. A total of 180 Juvenile Siberian sturgeons after two weeks of adaptation, were randomly distributed in 15 fiberglass tanks (2000 liters). 12 fish were introduced to each tank. Super-supplements at 2.5 %, 5 % and 10 % were added to the diet and experiments were performed in triplicate. Fish biometry was carried out in all treatments during rearing period. Samples were collected for the measurement of growth, blood, immune and osmotic indices during the rearing period. The results showed that the average final weight, final biomass, body weight increasing (BWI), specific growth rate (SGR), condition factor (CF) and daily growth rate (ADG) showed significant difference between control group with other treatments ($P < 0.05$). The number of white blood cells (WBC), red blood cells (RBC) and hematocrit showed significant differences in control group compared to other treatments ($P < 0.05$). There were significant differences between treatments in levels of lysozyme activity, immunoglobulin, complement C₃ and C₄



($P < 0.05$). No significant changes were observed in the osmolality and electrolytes (calcium, sodium and potassium) levels between controls with the other treatments ($P > 0.05$). According to the results, the use of super-supplement improved growth and immune indices, particularly in the treatment including 5% super-supplement compared to treatment contained antibiotic and adding it to the diet is recommended.

Keywords: Supplementary, Antibiotic, Blood Immunity and Biochemical Indicators, Siberian sturgeon, *Acipenser baerii*