The effect of short starvation and re feeding in liver index and thyroid hormones levels of beluga juveniles (*Huso huso*)

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Abstract

The present study was performed to determine the effect of short periods of starvation and re-feeding on liver index and thyroid hormones levels in *Huso huso.* 180 juveniles with an average initial weight of 34.58 ± 5.32 gr, treated in4 groups consisting of the control treatment (F) was fed 4 times daily to the extent of apparent satiety, SRF1 treatment with four alternating periods of two days of starvation and food 8 8-day feeding after each starvation period, SRF2 treatment with two alternating 4-day starvation periods and 16-day feeding after each starvation and SRF3 treatment with 8-day starvation period and 32-day feeding period, which are tested for 40 days. Based on obtained results, the levels of liver index and enzymes after starvation and re-feeding did not show a significant difference in the subsequent experimental treatments ($P>0.05$). However, a significant decrease observed in the levels of thyroid hormones (T3 and T4) levels by applying periods of starvation and re-feeding compared to the control group ($P<0.05$). According to the obtained results, *Huso huso* has the ability to adapt to the periods of starvation and re-feeding. However, the level of thyroid hormones after tolerating the period of starvation and re-feeding did not return to normal, which indicates the negative effect of the period of food deprivation on the levels of these hormones, which could be an emphasis on more time are needed to returnthese hormones levels to initial levels.

Keywords: *Huso huso*, Liver index, Liver enzymes, Thyroid hormones, Starvation.