

Changes in some of plasma steroid hormones of mail beluga (*Huso huso*) grower in netting pen in Gorgan Bay with effecting of commercial prebiotics

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Abstract

The aim of this study was to evaluate the effect of ultramax, celmanax, and A-max commercial biomass supplements with dietary supplements on testosterone, progesterone and 17-beta estradiol in blood plasma of *Huso huso*, with an initial weight of 423.4 ± 0.4266 kg, cultivated in the fence (Penn) system in Gorgan Bay. 360 fish were introduced into three experimental treatments and one control treatment with three replications (pens $2 \times 2 \times 1$ m). Fish were fed with diets supplemented with Ultra A-Max, celmanax, and A-Max all at 1g / kg for 90 days in T1, T2, T3 and T4 treatments, respectively. At the end of the experiment, blood plasma analysis showed that testosterone levels increased in T2 treatment (elephant diets supplemented with one gram / kg ultrasound) compared with control, but no significant difference was observed. The highest level of progesterone was obtained in T2 treatment, which showed a significant difference between treatments ($p < 0.05$). The results showed that there was a significant difference in beta-estradiol level 17 between experimental treatments and the maximum was obtained in treatment T4. ($P < 0/05$).

Keywords: Beluga, Celmanax, Plasma analyze, estradiol-17 β , progesterone