

# **The Effect of A max Ultra, A Max and Celemanax Perbiotics on the Level of Steroid Hormones in *Huso huso* Fillets in Pen Culture Conditions of Gorgan Gulf**

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## **Abstract**

Given the importance of steroid hormones in evaluating the reproductive status of fish, a study to evaluate The effect of three ultra A-max, A-max and Celemanax on the level of Huso huso steroid hormone hormones was studied for 90 days. For this purpose, 120 females with an average weight of  $4.25 \pm 0.5$  kg were dominant in three experimental treatments and one control treatment, each with three replicates (10 fish per replicate) in 12 mesh cages of  $1/20 \times 1 \times 2$  meter of storage. At the end of the experiment period, fish from experimental blood samples were taken. It was then determined by analyzing the results of the laboratory that there was a significant difference in the levels of testosterone and progesterone hormones between treatments ( $p < 0.05$ ). Blood plasma analysis showed no significant difference in beta-estradiol levels of 17 beta-estradiol between treatments ( $p > 0.05$ ).

**Keywords:** Commercial prebiotic, steroid hormones , Beluga, pen culture