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**Effect of Adding Cortisol and Thyroxin Hormones to the Grass carp
“*Ctenopharyngodon idella* (Val., 1844)” Diets on Some Physiological and Nutritional
Parameters During Salt Acclimatization**

Fatima A. M. Sultan^{1*}, **Adel Y. Al-Dubakel**², **Majed M. Taher**²

¹Departement of Fisheries and Marine Resources, University of Basrah, Iraq

²Unit of Aquaculture, College of Agriculture, University of Basrah, Iraq

*Corresponding Author:

fatimamantather49@gmail.com

ABSTRACT

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The impact of adding cortisol and thyroxin hormones was examined in the present study in the grass carp “*Ctenopharyngodon idella* (Val., 1844)” diets on some physiological and nutritional parameters during salt acclimatization. Seven diets with the same nitrogen and caloric content were prepared: one control diet vs. six experimental diets. Grass carp (24.80± 2.01g) were obtained from the Aquaculture Unit in the College of Agriculture- University of Basrah. Fish were maintained under laboratory conditions (salinity= 1.3g/ l) for one week in plastic aquaria. Fishes were fed twice daily on feed containing 35% protein with a feeding rate of 3% of their body weight. Grass carp were acclimatized to the target salinity of 10g/ L by the addition of sea salt. The growth parameters showed that weight gain was recorded at the highest value in T7 (5.22g), which was significantly different ($P \leq 0.05$) from the other treatments (3.93, 3.53, 4.02, 4.08, and 4.38 for T2, T3, T4, T5 and T6, respectively), while the lowest value was noted in the control treatment. The same trends were found for relative growth rate (RGR), specific growth rate (SGR), daily growth rate (DGR), and feed conversion ratio (FCR). The effects of thyroxin and cortisol hormones on sodium ion in blood plasma indicated a significant ($P \leq 0.05$) decline in all treatments compared to the control treatment in the first day of transportation and continued to the 10th day in treatments T3, T4, T6 and T7. Similarly, a significant ($P \leq 0.05$) effect was found for thyroxin hormone in potassium ion in blood plasma in treatments T2, T3, and T4 with control treatment from the first day of transportation in 10g/ l salinity, while for the cortisol hormone, a significant ($P \leq 0.05$) decline was detected in treatments T6 and T7 start from the first day and continued to the 10th day in treatment T7 compared to the control treatment. Sodium and potassium ions concentration in the muscles showed no significant ($P > 0.05$) differences among all treatments with the control treatment on the first day, but a significant ($P \leq 0.05$) decline in the 10th day in some treatments compared to the control treatment. Water content of muscles during the transportation in 10g/ l salinity showed a significant ($P \leq 0.05$) increase in treatment T3 compared to the control treatment in the thyroxin hormone treatment in the 10th day. However, in the cortisol hormone treatment, a significant ($P \leq 0.05$) decrease was recorded on the 10th day in treatment T7 compared to other treatments. No effect was noticed of the thyroxin and cortisol hormones on the packed