# The adaptability (ionic-osmotic) and tissue changes of gills and Kidney in rainbow trout *(Oncorhynchus mykiss)* fish for introduction into cages in the Caspian Sea

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This study aimed to determine domain the adaptability of rainbow trout(*Oncorhynchus mykiss*) fingerlings in fresh water up to 20 per thousand (grams per liter) for providing facilities for growing this valuable species in the aquatic environment with salinity unconventional Specifically, fish breeding has been carried out in sea cages in the Caspian Sea. The results of the investigation of the fishes introduced to different salinities indicated that trout fish weighing 28 grams had an acceptable ability to make changes in ion-osmotic and tissue factors in kidneys and gills achieve survival and adaptation in salinity ppt 0, 13, 20. Therefore, it can be concluded that this size of rainbow trout has the physiological potential for compatibility and survival in water with salinity of the Caspian Sea (12-13 ppt) for breeding in the cage.

**Keywords**: rainbow trout, adaptation, Ionic -Osmosis, gill, kidney ,Caspian Sea, cage