



## **Feasibility of fish cage culture based on physico-chemical parameters affecting water quality and trophic level of Hasanlou Dam Reservoir, West Azarbaijan, Iran**

Seidgar M.<sup>1\*</sup>; Nekuiefard A.<sup>1</sup>; Mohebbi F.<sup>1</sup>; Hafezieh M.<sup>2</sup>; Alizadeh Z.<sup>1</sup>; Mostafazadeh B.<sup>1</sup>; Shiri S.<sup>1</sup>; Abbaspour Anbi A.<sup>1</sup>

1- National Artemia Research Center, Iranian Fisheries Science Research Institute, Agricultural Research, Education and Extension Organization, Urmia, Iran

2- Iranian Fisheries Science Research Institute, Agricultural Research, Education and Extension Organization, Tehran, Iran

\*Corresponding author's email: seidgar21007@yahoo.com

### **Abstract**

Fish cage culture is a new method of aquaculture in surrounded areas and has grown exponentially due to global demand for aquatic products. The aim of this study was to assess the feasibility of fish cage culture by monitoring of the Hasanlou dam reservoir and determining its water quality and trophic level. Sampling was done from 2 stations from east and west of the reservoir seasonally from summer 2017 to spring 2018 from water surface. The values of The TSI trophic index were calculated based on total phosphorus and depth of secchi disc observation. The results showed that changes in water temperature, electrical conductivity, pH and transparency were 6.6-28.1 °C, 553-694  $\mu$ S/cm, 7.14-9.23 and 0.35-1.2 m. respectively. Also, the nitrate, nitrit and total phosphorus concentration ranges were 1.84-9.74mg/l, 0.009-0.03 mg/l, and 0.11-0.452mg/l, respectively. Based on the results of trophy status the Hasanlou dam was reported as hyper-eutroph which indicates high phosphorus load and pollution from agricultural runoff in this Lake. Therefore, although it is in the permissible range of fish cage culture in terms of some physico-chemical factors, but due to being hyper-eutrophic it is not recommended for the development of fish cage culture.

**Keywords:** Cage culture, physico-chemical parameters, Hasanlou Dam