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Investigation of immunological characteristics of rainbow trout in Gomishan saltwater ponds with those reared in freshwater

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Abstract

The aim of this study was to compare immune responses of rainbow trout in saltwater earthen ponds in Gomishan shrimp culture sites and freshwater fiberglass tanks. To the end, 10000 fish were distributed in a three-ha earthen pond and 150 fish in three fiberglass tanks (2000L). Blood samples were taken after 3 months. There was no significant difference in water temperature, dissolved oxygen and pH between the pond and tanks ($P>0.05$); however, water salinity and ammonia was higher in the pond compared to the tanks ($P<0.05$). There was no significant difference in serum albumin between the treatments ($P>0.05$); however, fish in the pond had significantly lower serum protein, globulin, lysozyme, complement and total immunoglobulin compared to the fish reared in the tanks ($P<0.05$). The results showed that the fish in the earthen pond had weaker immune responses compared to those reared in freshwater, which might be due to increase in water salinity and ammonia.

Keywords: Trout, Earthen pond, Immune, Saltwater

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