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# The Relationship between Biochemical Factors of Coelomic Fluid with Biological Characteristics of Gonad, Fertilization Success, Hatching Rate and Larval Size in *Rutilus frisii kutum*

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## Abstract

This study reviews the relationship between biochemical compounds of coelomic fluid (sodium, potassium, magnesium, calcium, cholesterol, total protein and glucose) and some biological characteristics of gonad (egg and biological properties of egg and gonad weight), fertilization success rate of egg and size of larvae in Kutum (*Rutilus frisii kutum*). For this purpose, in spring 2007, 48 specimen females with a mean length of 49.62 ± 1.2 cm and weight of 977 ± 229 g (without calculating gonad weight) from the Tajan River captured and these relationships were examined. This study showed that there was significant correlation between $K^+$ and perivitelline space ($P<0.05$) while there was an inverse significant correlation between $K^+$ and yolk sphere to perivitelline space ratio ($P<0.05$). There was significant correlation between $Mg^{2+}$ and gonad's weight ($P<0.05$). There was an inverse significant correlation between $Na^+$ to $K^+$ ratio with number of eggs in one gram of ovulated gonad ($P<0.05$) while there was a significant correlation between $Na^+$ to $K^+$ ratio and $Ca^{2+}$ to potassium ratio with larval size in second biometry ($P<0.05$). There was also significant correlation between total protein and diameter of the hydrated eggs ($P<0.05$). There were significant correlation between glucose and diameter of egg, surface and volume and perivitelline space and there was inverse significant correlation between glucose and surface to volume ratio ($P<0.05$).

Keywords: *Rutilus frisii kutum, Egg, Coelomic fluid (gonadal fluid), Caspian Sea*