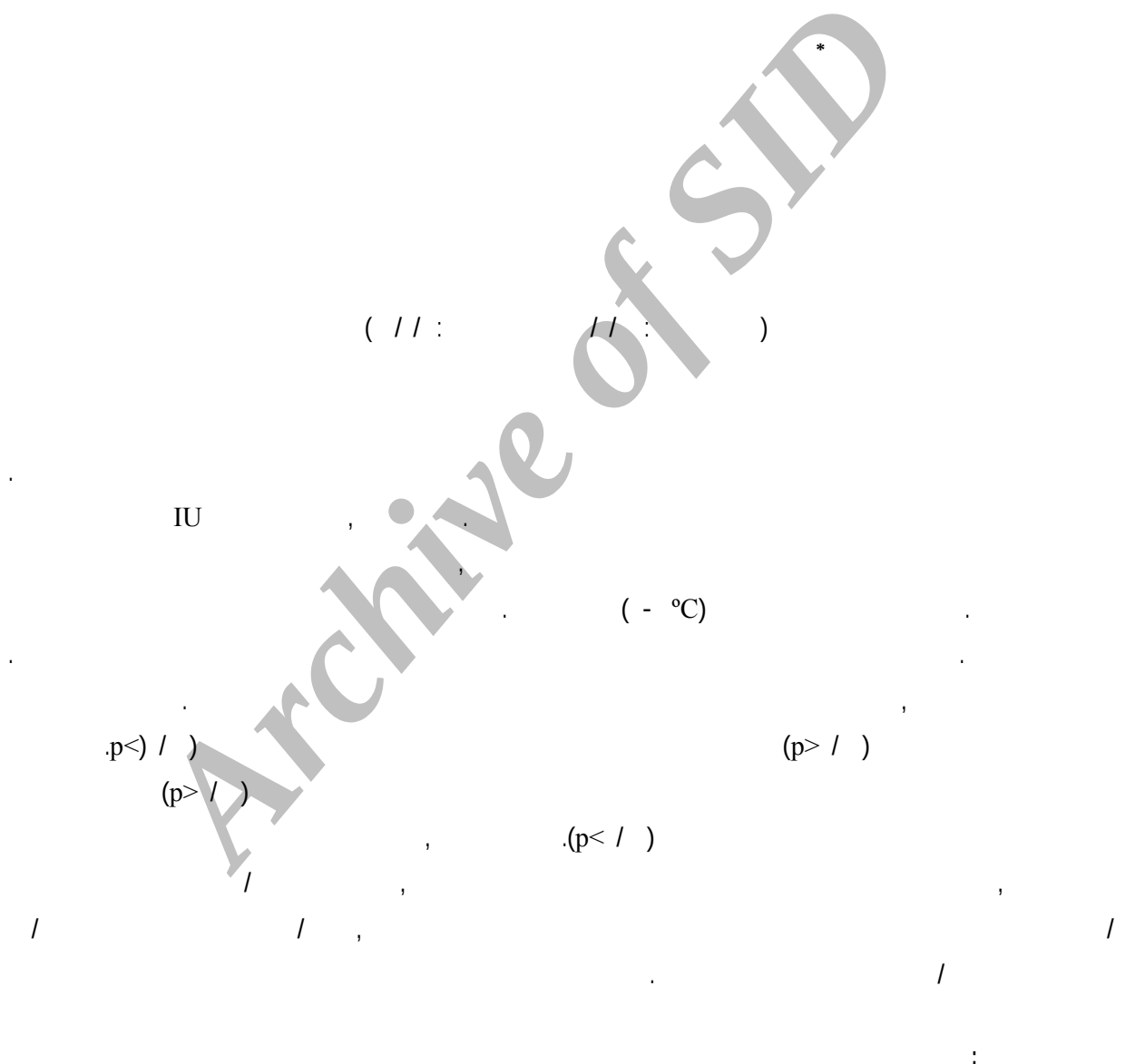

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(*Oncorhynchus mykiss*)

(*Oncorhynchus*

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Effect of antibiotics and activating solutions on protecting the fertility of rainbow trout (*Oncorhynchus mykiss*) sperm during short-term storage

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Abstract

In this study, preservation of rainbow trout (*Oncorhynchus mykiss*) sperm and effects of preservation duration and antibiotics and activating solutions on the fertility of sperm were investigated. For assessing the effect of antibiotics on fertility two samples – one including antibiotic and another without antibiotic – were devised. In the first sample, sperms were treated with a solution containing 250 IU/ml penicillin and 250 µg/ml streptomycin sulfate, and in second treatment, sperms were put in plastic plates without being treated with antibiotics and were stored in a refrigerator (2-3 °C). Sperm and zygote fusion happened 0, 6, 8, 12, 19 and 25 days after storage in refrigerator. Water and Billard saline solution were used at the time of fusion to evaluate the impact of the type of activating solutions on fertility. The results showed that eyeing and hatching rates decreased with the storage duration. These differences were not significant between zeroth and 6th days ($p > 0.05$), but after 8 days of storage, significant differences ($p < 0.05$) were observed. There were not significant differences in eyeing and hatching rates between the two samples (with and without antibiotic) until day 12 of storage, but significant differences were noticed between the two samples ($P < 0.05$) on days 19 and 25. In all samples, Billard saline solution produced higher fertilization rates as compared to water. In water-treated samples, eyeing rate decreased strongly from 89.06 to 12.15 and zero percent on days 0, 19 and 25, respectively, but in the samples treated with Billard saline solution, fertility decreased from 98.86 percent on day 0 to 74.63 percent on day 19 and 79.78 percent on day 25.

Key words: Short-term storage, Semen, Rainbow trout, Antibiotic, Activating solution.

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