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Standardized cryopreservation protocol of European perch (*Perca fluviatilis*) semen allows to obtain high fertilization rates with the use of frozen/thawed semen

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Abstract

The general aim of this study was to develop an efficient and standardized cryopreservation procedure for European perch semen. The specific aims of this study were: to test the effects of (i) final glucose concentration, (ii) final sperm concentration in the extended semen and (iii) test the storage time of post-thaw semen on sperm motility parameters. Moreover, the effects of cryopreservation of semen on fertilization rates were tested at sperm:egg ratios ranging between 50,000:1 and 500,000:1 (iv), as well as the fertilization of 25g portions of eggs (v). The range of optimal sperm concentrations in straws with high post-thaw sperm motility (66–73%) was quite wide, from 1.0 to 6.0 × 10^9 spermatozoa ml^{-1}. The final glucose concentration of 0.30–0.34 M in 7.5% methanol produced the highest results of sperm motility (76 ± 5%) after cryopreservation. Storage time of post-thaw semen negatively influenced sperm motility parameters. The fertilization rates while using cryopreserved semen were high (79 %) and did not differ from fresh semen (85%). Similar results (73–77%) were obtained between sperm:egg ratio