

First production of larvae using cryopreserved sperm: Effects of preservation temperature and cryopreservation on European eel sperm fertilization capacity - DTU Orbit (08/11/2017)

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Sperm cryopreservation is a useful tool in captive fish reproduction management, that is to synchronize gamete production, especially in the case of species as the European eel, where the time of female spawning readiness is unpredictable. Several protocols to cryopreserve sperm of this species have been described, but until recently fertilization trials were not feasible. This study evaluated the effect of cold storage of diluted sperm prior to fertilizations and tested whether a previously defined protocol for European eel sperm cryopreservation can be successfully applied in fertilization trials to produce viable offspring. In our experiment, the sperm motility was evaluated after the extraction and the best samples were selected and pooled. Until stripping of eggs and fertilization, diluted sperm samples were maintained at either 4 or 20°C, or cryopreserved, following existing protocols. Fertilization of two egg batches was attempted. Diluted sperm caused a similar percentage of fertilized eggs and a similar number of embryos and larvae, independently of storage temperature (4 or 20°C). The cryopreserved sperm resulted in a lower percentage of fertilized eggs, but embryos developed and a few larvae ('cryolarvae') were obtained 55 h after fertilization in one of the two egg batches. This result evidences that the tested cryopreservation protocol is applicable for eel reproduction management, although improvements will be required to enhance fertilization success

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