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Impact of Propolis on Cryopreservation of Arctic Charr (Salvelinus alpinus) Sperm

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Abstract : Cryopreservation of sperm causes damages and adversely affected sperm motility and viability resulting in lower hatching rates. The aim of this study is to determine whether propolis has potential protective effect on cryopreservation and fertilization ability of spermatozoa of Salvelinusalpinus. The extenders were prepared by using simple glucose solution (0.3 M glucose) to which 10% Me2SO added with different levels of propolis (0.4, 0.8 and 1 mg/ ml) and 10% egg yolk (as a control without propolis). The pooled semen samples diluted at the ratio of 1:3 by the extenders were subjected to cryopreservation. The percentage and duration of motility and fertilization tests of cryopreserved sperm samples have been done immediately after thawing and compared with control and fresh semen. The extenders containing propolis showed higher percentage motility and motility duration than control group ($P < 0.05$). Especially the group II (0.8 mg/ ml propolis) and the group III (1 mg/ ml propolis) showed significant positive effects on both post thaw motility and hatching ability. In conclusion, this study confirms that the propolis is an appropriate cryoptrotective agent in fish semen and it maintained the integrity of the spermatozoa during the cryopreservation process.

Keywords : propolis, arctic charr, semen, cryopreservation
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