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Over-exploitation is a major threat to Sri Lankan endemic fish. Many anthropogenic actions badly effect on the decline of natural fish populations. Because of the fast decline of the endemic fish population, new technologies are to be searched for in aquaculture to preserve fish sperm for the conservation of endemic fish in Sri Lanka. The present study was conducted to evaluate a developed cryopreservation protocol on *Labeo heladiva* fish sperm cryopreservation. Before the preservation, sperm motility of *L. heladiva* brooder was observed as 91 % - 100 % under the microscope. Cryopreservation solution was prepared by using 65ml of extender solution and 15ml of Dimethyl sulphoxide (DMSO) mixed to prepare diluent filled 3: 1, *L. heladiva* spermatozoa were introduced to each 5ml cryovials, and vials were kept in 8 – 10 °C for an equilibration period of 45 minutes. The maximum motility (91 % - 100 %) was observed under the equilibration period and freezing was carried out at the –15 °C in a liquid nitrogen fumigation period of 3 – 4 minutes and frozen spermatozoa were kept in a goblet stored in liquid nitrogen at the – 196 °C for 1 month time period. During that period cell motility and viability were observed within 1 week time intervals. Frozen sperm were thawed at the temperature of 38 ± 1 °C. Fresh semen sample has above 91 % of cell motility and 97 s ± 2 s cell viability, one month after cryopreserved semen sample resulted a comparatively 70 % success in cell motility and 44 s ± 2 s cell viability. Also observed 60 % ± 1 % spermatocrit values of *L. heladiva* fish sperm and get 3 – 5 ml of milt volume per kg of body weight. The cryopreservation protocols developed by Routry 2007, have reasonable success with the *L. heladiva* sperm cryopreservation. It seems to be only applicable to short-term cryopreservation of *L. heladiva* fish sperm. Therefore, this protocol has to be further optimized to use in *L. heladiva* sperm for long term cryopreservation.