

ORL-EB&C-11**The Ex-situ Conservation Practices on State Fish of Madhya Pradesh Mahseer *Tor tor***

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Mahseer, celebrated for its unique flavor and significant role in recreational fishing, is experiencing alarming population declines as a direct consequence of various anthropogenic activities. Designated as the State Fish of Madhya Pradesh in 2011, the imperative to conserve this species has become increasingly urgent. The current study is dedicated to exploring cryopreservation techniques for Mahseer milt as a vital conservation strategy aimed at preserving this iconic fish species.



In this research, five distinct extenders named 7, 9B, 9C, 9D, and Alsever's solution were meticulously evaluated for their efficacy in preserving the quality of Mahseer milt during cryopreservation.

Employing a milt-to-diluent ratio of 1:6 and utilizing 10% (v/v) dimethyl sulfoxide (DMSO) as the cryoprotectant, the study aimed to identify the most suitable extenders for maintaining sperm viability and enhancing fertilization potential. The cryopreserved milt was subsequently stored in 0.5 ml straws within a liquid nitrogen environment to ensure optimal preservation conditions.

The results demonstrated that each extender yielded promising outcomes, with the mean sperm activation rate in water surpassing 70%, and the survival time of spermatozoa exceeding 90 seconds. In fertility trials, the control group exhibited an approximate hatching success rate of 18%. In contrast, the extenders showed variable performance, with hatching rates of approximately 13%, 26%, 40%, 26%, and 24% for extenders 7, 9B, 9C, 9D, and Alsever's, respectively. Notably, extenders 9C and 9B emerged as particularly effective, demonstrating significant enhancements in hatching success compared to the control group.

These findings underscore the critical role of cryopreservation techniques in ex-situ conservation initiatives aimed at safeguarding the genetic diversity and sustainability of Mahseer populations. Given the declining numbers of this species, the implementation of such advanced cryopreservation strategies is essential not only for the preservation of Mahseer but also for the broader ecological integrity of freshwater ecosystems. This study highlights the importance of continued research in optimizing cryopreservation protocols to ensure the survival of Mahseer and other threatened species in the face of environmental challenges.