

Enhancing fish hatchery practices – Extending solutions

Facts

- The life span of fish sperm is very short once it comes in contact with water (e.g. Nile tilapia: 4-5 min; Common carp: 1 min; Atlantic salmon: 45 sec)
- The sperm activity could be extended if stored in solutions of specific salinity. This allows:
 - Better time planning through handling females only during stripping
 - Ability to validate the stored sperm quality before its use in fertilization
- Ringer solution is a common extending agent for fish sperm

A 100-ml of Ringer solution:

Sodium chloride	592 mg
Potassium chloride	172 mg
Calcium chloride	079 mg
Magnesium sulfate	031 mg

+

100,000 units of penicillin
100 mg of streptomycin

All of the above are dissolved in 100-ml of water

Sperm is mixed with “Ringer solution” at a ratio of 1:1

The sperm-solution is refrigerated at 4 C

Before egg fertilization, refrigerated sperm-ringer solution, is exposed to room temperature for enough time, otherwise sperm may undergo a thermal shock