

BROODSTOCK MANAGEMENT: CRYOPRESERVATION PARAMETERS TO SELECT NATIVE TROPICAL FISH

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Genetic management of broodstock aims to produce fingerlings of superior quality from the adoption of practices and technological processes that assist in the control of the breeders. For this effective control, the fish farmer must avoid matings that would yield inbreeding and select the best breeders by the sperm quality. Then, the fish farmer should identify the families with Passive Integrated Transponder (PIT) tags and maintain a database with animal information (origin, fecundity, number of reproductions by season, etc.). DNA profiling technologies and tagging system can be carried out for estimating inbreeding in the absence of pedigree information from broodstock, and adopt some parameters to selection of males for sperm cryopreservation. The sperm cryopreservation can maximize the effective number of breeders kept in fish farming, reducing maintenance costs (feed), besides to ensuring the conservation of animal genetic resources. So, it is essential that sperm quality parameters are verified in the first moment and then also after the reproduction based on fertilization rate and survival rate. It is not recommended the use of cryopreservation of randomly, since in this way the fish farmer can save inbreeding animals or with a high percentage of spermatozoa morphological alterations or still with null progressive motility. With regard to sperm quality, the main parameters to be checked are as follows: semen volume, progressive motility, spermatic vigor, spermatic concentration and spermatic morphology. In the process of cryopreservation is important that progressive motility of the fish be at least 80%. The proper choice of extender, that could be glucose and egg yolk for round fish and powdered milk for catfish, and the cryoprotectant, that could be dimethyl sulphoxide (DMSO) and methanol, respectively, is essential to reduce spermatozoa morphological alterations from frozen and thawing and obtain best rates of fertilization. The application of the parameters is the first step for conservation of fish with higher genetic quality. The second step is the measure of productive performance of the animal, with evaluations of weight gain of offspring. Thus ensuring that the males have excellent reproductive performance (sperm quality) and productive (fattening) being in fact genetically superior, attesting the quality of the male breeders.