

# Spermatozoa Quality of Goramy Fish, *Osphronemus goramy* Lacepede, 1801, Twenty Four Hours Post-cryopreservation: The Role of Dimethyl Sulfoxide (DMSO) as a Cryoprotectant

Peranan Dimetil Sulfoksida sebagai Krioprotektan dalam Mempertahankan Kualitas Spermatozoa Ikan Gurami, *Osphronemus goramy* Lacepede, 1801, Dua Puluh Empat Jam Pascakriopreservasi

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## Abstract

The objective of the study was to find the optimum concentration of dimethyl sulfoxide (DMSO) among 0%, 5%, 7%, 10%, 13%, 15%, and 17%, respectively, on sperm quality of *Osphronemus goramy* Lacepede, 1801, twenty four hours post-cryopreservation. Sperm was collected by hand-stripping method, and was put on 2ml of cryotube, and was then diluted by combination of DMSO, and 189M extender. The ratio of sperm and diluent was 1 : 4 according to Horton & Otto (1976). Sample (sperm + diluent) was equilibrated at 4°C for 45 minutes, and was vaporated for 10 minutes, and was then frozen in Liquid Nitrogen for 24 hours. Thawing was carried out at 30°C for 30 seconds. According to Tukey test ( $P > 0.05$ ), 13% of DMSO was showed the highest post-thawed sperm motility (68,58%) and sperm viability (63,5%), and also was showed the lowest post-thawed sperm abnormality (29%), respectively.

Key words: DMSO, 189M extender, cryopreservation, goramy, sperm quality

## Abstrak

Penelitian dilakukan dengan tujuan mengetahui pengaruh berbagai konsentrasi DMSO (0%, 5%, 7%, 10%, 13%, 15%, dan 17%) sebagai krioprotektan terhadap kualitas spermatozoa ikan gurami, *Osphronemus goramy* Lacepede, 1801, dua puluh empat jam pascakriopreservasi. Penelitian dilakukan di Balai Besar Pengembangan Budidaya Air Tawar (BBPBAT), Sukabumi. Semen dikoleksi dengan cara pengurutan (*stripping*) dan dievaluasi secara makroskopis (warna, pH, dan volume) dan mikroskopis (persentase motilitas, viabilitas, abnormalitas, dan konsentrasi spermatozoa) baik sebelum maupun sesudah kriopreservasi. Semen diencerkan dengan pengencer yang mengandung ekstender 189M dan krioprotektan DMSO (0%, 5%, 7%, 10%, 13%, 15%, dan 17%), disimpan pada *cryotube* 2 ml dan dikriopreservasi selama 24 jam. Peningkatan konsentrasi DMSO memengaruhi kualitas spermatozoa ikan gurami pascakriopresevasi. Konsentrasi DMSO yang terbaik berdasarkan hasil pengamatan adalah DMSO konsentrasi 13% ( $P > 0,05$ ) dengan persentase motilitas sebesar 68,58%; abnormalitas sebesar 29%; dan viabilitas sebesar 63,5%.

Kata kunci: DMSO, ekstender 189M, kriopreservasi, ikan gurami, kualitas spermatozoa