Potensi Madu Sebagai Suplemen Ekstender pada Preservasi Spermatozoa Ikan Mata Merah (Systomus orphoides) = The Potential of Honey as Extender Supplementation on Preservation Spermatozoa of Javaen Barb Fish (Systomus orphoides)

Sri Widiyanti Rahayu Hilia, author

Abstrak

Penurunan populasi ikan mata merah (Systomus orphoides) terus terjadi akibat penangkapan berlebih dan kerusakan lingkungan. Upaya pembudidayaan terus dilakukan. Salah satunya dengan teknik preservasi sperma. Keberhasilan preservasi ditentukan oleh penggunaan ekstender. Ekstender yang baik ialah yang dapat menjaga keseimbangan buffer larutan dan memberikan nutrisi bagi sperma selama penyimpanan. Tujuan dari penelitian ini ialah mendapatkan konsentrasi optimal suplemen madu dalam ekstender terhadap motilitas, viabilitas, dan abnormalitas spermatozoa pascapreservasi 48 jam serta mengevaluasi kemampuan fertilisasi, daya tetas telur, dan sintasan larva 3 hari dari sperma ikan mata merah (S. orphoides) pascapreservasi 48 jam. Konsentrasi madu yang digunakan yaitu 0%, 0,2%, 0,4%, 0,6%, 0,8%, dan 1%. Rasio antara sperma dan campuran ekstender (fish Ringer dan madu) yang digunakan ialah 1:10. Pengoleksian sperma dan sel telur dilakukan secara stripping. Sampel disimpan dalam lemari pendingin bersuhu 4°C selama 48 jam. Evaluasi spermatozoa pascapreservasi dilakukan dengan melihat motilitas, viabilitas, dan abnormalitas, serta kemampuannya untuk memfertilisasi sel telur, daya tetas telur, dan sintasan larva hingga umur 3 hari. Analisis data menggunakan uji ANAVA satu arah dan dilanjutkan dengan uji Tukey. Berdasarkan hasil uji ANAVA dan uji Tukey terlihat ada perbedaan nyata (P<0,05) terhadap persentase motilitas, viabilitas, dan abnormalitas spermatozoa pascapreservasi, serta daya tetas telur dari spermatozoa pascapreservasi. Perbedan nyata tidak ditemukan pada fertilitas dan sitasan larva dari spermatozoa ikan mata merah pascapreservasi. Konsentrasi madu 0,6% merupakan konsentrasi optimal yang menghasilkan persentase motilitas, viabilitas, daya tetas telur tertinggi (82,35 ± 1,19%; 70,81 ± 1,06%; 28,45 ± 6,27%), serta menghasilkan nilai abnormalitas (15,73 ± 0,62%) spermatozoa terendah pascapreservasi.

.....Javaen barb fish (Systomus orphoides) population was decline due to overfishing and environmental changes. Cultivation efforts continue. One of them premises sperm preservation techniques. Preservation success is determined by a good use of extenders which to maintain the balance of buffer solution and provides nutrients for sperm during storage. The purpose of this study was to obtain the optimum concentration of honey supplement in extender on the motility, viability, and abnormalities of spermatozoa after 48 hours of preservation, as well as evaluating the ability of fertilization, hatching rate, and 3-day larval survival rate of javaen barb fish (S. orphoides) sperm after 48 hours of preservation. The honey concentrations used were 0%, 0.2%, 0.4%, 0.6%, 0.8%, and 1%. The ratio between sperm and the mixture of extenders (fish Ringer and honey) used was 1:10. Sperm and egg collection was done by stripping. Samples were stored in a refrigerator at 4°C for 48 hours. Evaluation of post-preserved spermatozoa was carried out by observing of motility, viability, and abnormalities, as well as their ability to fertilize eggs, hatching rate, and 3-days larval survival. Analysis of data using one-way ANOVA followed by Tukey's test. Based on the results of the ANOVA test and Tukey's test, it was seen that there was a significant difference (P<0.05) on

the percentage of motility, viability, and abnormalities of post-cryopreserved spermatozoa, and significantly different ($P<0.05$) hatching rate of post-preserved spermatozoa. Significant difference was no found in fertility and larval survival from javaen barb fish spermatozoa after preservation. Honey concentration 0.6% was the optimum concentration that produces the highest percentage of egg motility, viability, hatchability (82.35 ± 1.19%; 70.81 ± 1.06%; 28.45 ± 6.27%) and produces the lowest abnormality value (15.73 ± 0.62%) of spermatozoa after preservation.