PENGARUH PENAMBAHAN *GLUTATHIONE PASCA THAWING* TERHADAP KUALITAS SEMEN DOMBA GARUT

INTISARI

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Penelitian ini bertujuan untuk mengamati pengaruh penambahan *glutathione pasca thawing* terhadap kualitas spermatozoa domba Garut yang terdiri atas motilitas individu, viabilitas, abnormalitas dan kerusakan DNA. Penelitian ini dilaksanakan di Laboratorium Fisiologi dan Reproduksi Fakultas Peternakan Universitas Gadjah Mada Yogyakarta yang berlangsung pada Agustus sampai dengan Oktober 2021. Penelitian ini menggunakan 30 *straw* semen beku yang dibeli dari Balai Inseminasi Buatan Lembang. Parameter yang diamati termasuk motilitas individu spermatozoa, presentase dari viabilitas dan abnormalitas diamati menggunakan metode pewarnaan eosin negrosin, presentase kerusakan DNA diamati menggunakan metode pewarnaan *methylene blue*. Penelitian dilakukan menggunakan rancangan acak lengkap (RAL) pola searah dengan tiga perlakuan level *glutathione* (0mM, 1mM dan 2mM). Data yang diperoleh dianalisis menggunakan analisis ragam (ANOVA) dan perbedaan antar perlakuan diuji menggunakan uji lanjut Duncan. Hasil penelitian menunjukkan bahwa level *glutathione* berpengaruh nyata ($p<0.05$) terhadap motilitas, viabilitas, abnormalitas, dan kerusakan DNA. Perlakuan level *glutathione* 2mM berpengaruh nyata (<0,05) menghasilkan motilitas (16,30%), viabilitas (10,32%), abnormalitas (20,78%) dan kerusakan DNA (13,35%) tertinggi dibandingkan perlakuan lainnya. Disimpulkan bahwa penambahan *glutathione* 2mM *pasca thawing* memberikan hasil terbaik terhadap motilitas individu, viabilitas, abnormalitas, dan kerusakan DNA semen domba Garut.

Kata kunci: domba Garut*, glutathione,* motilitas individu, viabilitas, abnormalitas, kerusakan DNA

THE EFFECT OF GLUTATHIONE ADDITION PASCA THAWING ON GARUT RAM SPERMATOZOA QUALITY

ABSTRACT

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This research aimed to observe the effect of post-thawing glutathione addition on the quality of Garut sheep spermatozoa consisting of individual motility, viability, abnormalities and DNA damage. This research was conducted at the Physiology and Reproductive Laboratory of the Faculty of Animal Science, Universitas Gadjah Mada, Yogyakarta, which took place from August to October 2021. This research used 30 frozen semen straws purchased from the Lembang Artificial Insemination Center. The parameters observed included the motility of individual spermatozoa, the percentage of viability and abnormalities were observed using the eosin negrosin staining method, the percentage of DNA damage was observed using the methylene blue staining method. The study was conducted using a completely randomized design (CRD) with a unidirectional pattern with three levels of glutathione treatment (0mM, 1mM and 2mM). The data obtained were analyzed using analysis of variance (ANOVA) and differences between treatments were tested using Duncan's advanced test. The results showed that glutathione levels had a significant effect ($p<0.05$) on motility, viability, abnormalities, and DNA damage. The 2mM glutathione level treatment significantly (<0.05) resulted in the highest motility (16.30%), viability (10.32%), abnormality (20.78%) and DNA damage (13.35%) compared to other treatments. It was concluded that the addition of 2mM glutathione after thawing gave the best results on individual motility, viability, abnormalities, and DNA damage of Garut sheep semen.

Key words: Garut sheep, glutathione, individual motility, viability, abnormalities, DNA damage