

INTISARI

PENGARUH GLUTATHIONE DALAM PENGENCER SEMEN TERHADAP KUALITAS SPERMATOOA AYAM KAMPUNG UNGGUL BADAN PENELITIAN DAN PENGEMBANGAN PERTANIAN PADA PRESERVASI 4°C

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Penyimpanan spermatozoa merupakan hal yang dapat mempengaruhi kualitas spermatozoa. Semen akan bereaksi dengan oksigen, sehingga terbentuk radikal bebas dan menurunkan kualitas semen. Penambahan antioksidan glutathione dapat mencegah terbentuknya *reactive oxygen species* (ROS) dan peroksidasi lipid. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan glutathione 0,2 mM dan 0,4 mM dalam pengencer semen ayam Kampung Unggul Badan Penelitian dan Pengembangan Pertanian (KUB) selama preservasi.

Penelitian ini menggunakan semen ayam KUB yang dikoleksi dengan cara masase abdominal. Semen segar diperiksa secara makroskopis dan mikroskopis, kemudian diencerkan menggunakan ringer laktat-kuning telur. Ringer laktat-kuning telur dibagi menjadi tiga perlakuan, yaitu ditambahkan glutathione 0,2 mM, glutathione 0,4 mM, dan tanpa penambahan glutathione (kontrol). Semen cair disimpan dalam pendingin suhu 4°C selama 6 jam, 24 jam, dan 48 jam. Semen dithawing dengan suhu 37°C selama 15 detik. Semen cair dilakukan pemeriksaan motilitas, viabilitas, dan integritas membran. Data hasil pemeriksaan dianalisis menggunakan SPSS dengan metode *One-Way ANOVA* pada setiap perlakuan dan dilanjutkan dengan uji *post hoc* Duncan.

Hasil penelitian dengan penambahan glutathione 0,2 mM pada semen ayam KUB selama penyimpanan 6 jam dalam pemeriksaan viabilitas spermatozoa memperlihatkan perbedaan yang nyata ($P < 0,05$), namun penambahan glutathione 0,4 mM pada semen ayam KUB selama penyimpanan 6, 12, maupun 24 jam tidak ada perbedaan ($P > 0,05$) dalam mempertahankan motilitas, viabilitas, dan integritas membran spermatozoa. Dapat disimpulkan bahwa penambahan glutathione kurang dapat mempertahankan kualitas spermatozoa ayam KUB selama penyimpanan 6, 12, maupun 24 jam.

Kata kunci: ayam KUB, glutathione, preservasi, 4°C, kualitas semen

ABSTRACT

THE EFFECT OF GLUTATHIONE IN SEMEN EXTENDER ON THE QUALITY SPERMATOOZOA OF SUPERIOR NATIVE CHICKEN OF THE AGRICULTURAL RESEARCH AND DEVELOPMENT AGENCY DURING PRESERVATION AT 4°C

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Storage of spermatozoa is something that can affect the quality of spermatozoa. Semen will react with oxygen, forming free radicals and reducing the quality of the semen. The addition of the antioxidant glutathione can prevent the formation of reactive oxygen species (ROS) and lipid peroxidation. This study aims to determine the effect of adding 0.2 mM and 0.4 mM glutathione in semen extender for superior native chicken of the Agricultural Research and Development Agency (KUB) during preservation.

This study used KUB chicken semen which was collected by abdominal massage. Fresh semen was examined macroscopically and microscopically, then diluted using ringer lactate-egg yolk. Ringer lactate-egg yolk was divided into three treatments, namely added glutathione 0.2 mM, glutathione 0.4 mM, and without the addition of glutathione (control). Liquid semen was stored in a cooler at 4° C for 6 hours, 24 hours, and 48 hours. The semen was thawed at 37 ° C for 15 seconds. The liquid semen was examined for motility, viability, and membrane integrity. The data from the examination results were analyzed using SPSS with the *One-Way* ANOVA method for each treatment and continued with test *post hoc* Duncan's.

The results of the study with the addition of 0.2 mM glutathione to KUB chicken semen during storage 6 hours in the examination of spermatozoa viability showed a significant difference ($P < 0.05$), but the addition of glutathione 0.4 mM in KUB chicken semen during storage 6, 12, and 24 hours there was no difference ($P > 0.05$) in maintaining the motility, viability, and integrity of the spermatozoa membrane. It can be concluded that the addition of glutathione is less able to maintain the quality of KUB chicken spermatozoa during storage 6, 12, or 24 hours.

Keywords: KUB chicken, glutathione, preservation, 4°C, sperm quality