

PENGARUH PENAMBAHAN *GLUTATHIONE* PADA PENGENCER *RINGER'S DEXTROSE* TERHADAP KUALITAS SEMEN KAMBING PERANAKAN ETAWAH

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan antioksidan *glutathione* dalam pengencer *ringer's dextrose* terhadap kualitas semen kambing Peranakan Etawah (PE). Penelitian dilakukan di Laboratorium Fisiologi dan Reproduksi Ternak, Fakultas Peternakan, Universitas Gadjah Mada, Yogyakarta. Semen ditampung dari seekor kambing umur 2 – 4 tahun, bobot badan 48kg. Kambing PE diberi pakan berupa konsentrat, hijauan (rumput gajah), legum *Indigofera* 2-3, minum *ad libitum*. Penampungan dilakukan menggunakan vagina buatan 2 kali dalam seminggu selama 2 bulan. Semen yang telah ditampung dibagi menjadi 4 perlakuan, yaitu terdiri atas kontrol: (Semen + Pengencer *ringer's dextrose* + tanpa penambahan *glutathione* (T0)); Perlakuan 1 (Semen + Pengencer *ringer's dextrose* + 1mM *glutathione* (T1)); Perlakuan 2: (Semen + Pengencer *ringer's dextrose* + 3mM *glutathione* (T2)); Perlakuan 3: (Semen + Pengencer *ringer's dextrose* + 5mM *glutathione* (T3)). Data yang diamati meliputi motilitas (%), viabilitas (%), dan abnormalitas (%), selanjutnya dianalisis menggunakan *analysis of variance* pola searah. Hasil penelitian menunjukkan bahwa penambahan *glutathione* dalam bahan pengencer *Ringer's Dextrose* memberikan pengaruh nyata ($P < 0,05$) terhadap motilitas, viabilitas, dan abnormalitas semen kambing PE. Rerata nilai motilitas dan viabilitas pada perlakuan T0, T1, T2, dan T3 berturut-turut adalah $51,50 \pm 10,01$ dan $63,50 \pm 5,34\%$, $42,50 \pm 6,35$ dan $55,90 \pm 4,51\%$, $51,00 \pm 11,01$ dan $61,00 \pm 5,58\%$, $63,50 \pm 9,14\%$ dan $63,70 \pm 4,32\%$. Nilai abnormalitas spermatozoa pada perlakuan T0, T1, T2, dan T3 berturut-turut adalah $4,10 \pm 1,60$, $5,50 \pm 1,43$, $4,20 \pm 1,62$, dan $3,10 \pm 1,90\%$. Dapat disimpulkan bahwa penambahan *glutathione* dalam bahan pengencer *ringer's dextrose* berpengaruh terhadap kualitas semen kambing PE. Hasil terbaik diperoleh pada penambahan *glutathione* 5mM pada pengencer *ringer's dextrose*.

(kata kunci: Glutathione, Kualitas semen, Ringer's Dextrose, kambing Peranakan Etawah)

THE EFFECT OF GLUTATHIONE ADDITION INTO RINGER'S DEXTROSE DILUENT ON THE SEMEN QUALITY OF ETAWAH BREED GOATS

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ABSTRACT

This study aimed to determine the effect of the addition of glutathione in ringer's dextrose diluent on the quality of semen of Etawah Crossbreed (ECB) goat. The research was conducted at the Laboratory of Animal Physiology and Reproduction, Faculty of Animal Science, Universitas Gadjah Mada, Yogyakarta. Semen was collected from a ECB goat aged 2 - 4 years, body weight 48 kg. The goat were fed with concentrate, elephant grass, indigofera legume and drinking water ad libitum. Semen was collected using artificial vagina twice a week for 2 months, and then was divided into 4 treatments, which consisted of control: Semen + ringer's dextrose diluent + without the addition of glutathione (T0); Treatment 1: Semen + ringer's dextrose diluent + 1mM glutathione (T1); Treatment 2: Semen + ringer's dextrose diluent + 3mM glutathione (T2); Treatment 3: Semen + ringer's dextrose diluent + 5mM glutathione (T3). The observed data include motility (%), viability (%) and abnormality (%), then analysed using one way analysis of variance. The results showed that the addition of glutathione in ringer's dextrose diluent had a significant effect ($P < 0.05$) on motility, viability, and abnormality of ECB goat semen. The mean motility and viability in treatments T0, T1, T2 and T3 were 51.50 ± 10.01 and $63.50 \pm 5.34\%$, 42.50 ± 6.35 and $55.90 \pm 4.51\%$, 51.00 ± 11.01 and $61.00 \pm 5.58\%$, $63.50 \pm 9.14\%$ and $63.70 \pm 4.32\%$, respectively. The mean abnormalities of spermatozoa in T0, T1, T2 and T3 were 4.10 ± 1.60 , 5.50 ± 1.43 , 4.20 ± 1.62 and $3.10 \pm 1.90\%$, respectively. It can be concluded that the addition of glutathione in ringer's dextrose diluent affects the semen quality of Etawah Cossbreed goat. The best results was achieved with the addition of 5mM glutathione in ringer's dextrose diluent.

(Keywords: Glutathione, semen quality, Ringer's dextrose, Etawah Crossbreed)