

PENGARUH PENAMBAHAN VITAMIN C PADA BAHAN PENGENCER TRIS KUNING TELUR TERHADAP KUALITAS SEMEN KAMBING SAANEN SETELAH PENYIMPANAN PADA SUHU 5°C SELAMA 72 JAM

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan vitamin C pada bahan pengencer tris kuning telur terhadap kualitas *semen* kambing Saanen selama penyimpanan pada suhu 5°C selama 72 jam. Penelitian dilaksanakan pada bulan Juni hingga September 2023 di Fakultas Peternakan, UGM. *Semen* diperoleh dari kambing Saanen berumur 3,5 tahun menggunakan metode penampungan dengan vagina buatan. Frekuensi penampungan *semen* adalah seminggu sekali, dilakukan sebanyak lima kali. Kambing Saanen yang digunakan diberi pakan berupa kombinasi indigofera kering (*Indigofera zollingeriana*), kolonjono (*Brachiaria mutica*), dan konsentrat, serta diberikan minum secara *ad libitum*. *Semen* segar dengan motilitas lebih dari 55%, viabilitas lebih dari 50%, dan abnormalitas dibawah 20% diencerkan dengan berbagai level penambahan vitamin C. Terdapat empat perlakuan yaitu tris kuning telur tanpa penambahan vitamin C (P0), tris kuning telur + 0,10 gr vitamin C (P1), tris kuning telur + 0,20 gr vitamin C (P2), dan tris kuning telur + 0,30 gr vitamin C (P3). Kualitas *semen* kambing Saanen dievaluasi dengan variabel motilitas, viabilitas, dan abnormalitas. Data yang diperoleh dianalisis menggunakan Rancangan Acak Lengkap (RAL) pola searah kemudian diuji lanjut dengan *Duncan* Multiple Range Test (DMRT) dengan signifikansi 5%. Hasil penelitian menunjukkan penambahan vitamin C memberikan pengaruh nyata ($p < 0,05$) terhadap motilitas dan viabilitas *spermatozoa*, namun tidak berpengaruh nyata ($p > 0,05$) terhadap abnormalitas *spermatozoa*. Persentase motilitas *spermatozoa* pada perlakuan P0; P1; P2; dan P3 berturut-turut adalah $29,00 \pm 14,32\%$; $58,00 \pm 16,81\%$; $53,00 \pm 14,83\%$ dan $23,00 \pm 7,58\%$. Persentase viabilitas *spermatozoa* sebesar $62,40 \pm 4,52\%$; $79,40 \pm 7,44\%$; $73,58 \pm 12,85\%$; dan $57,85 \pm 12,96\%$. Persentase abnormalitas *spermatozoa* sebesar $16,02 \pm 3,09\%$; $12,94 \pm 2,98\%$; $12,37 \pm 1,97\%$; dan $12,19 \pm 2,29\%$. Kesimpulan dari penelitian ini bahwa penambahan vitamin C pada pengencer tris kuning telur berpengaruh terhadap motilitas dan viabilitas *semen* pada penyimpanan 5°C selama 72 jam. Penambahan vitamin C sebanyak 0,1 gr pada memberikan hasil terbaik.

Kata Kunci: Kambing Saanen, Kualitas semen, Pengencer Tris Kuning Telur, Vitamin C

THE EFFECT OF VITAMIN C SUPPLEMENTATION INTO TRIS EGGS YOLK DILUTION ON SAANEN GOAT SEMEN QUALITY AFTER STORED IN 5°C TEMPERATURE DURING 72 HOURS

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ABSTRACT

This study aimed to investigate the influence of vitamin C supplementation into the egg yolk extender Tris on the quality of Saanen goat semen during storage at 5°C for 72 hours. The research was conducted from June to September 2023 at the Faculty of Animal Science, UGM. Semen was collected from 3.5-year-old Saanen goats using an artificial vagina collection method. Semen collection was done once a week, with a total collection frequency of five times. The Saanen goats were fed a combination of dry indigofera (*Indigofera zollingeriana*), kolonjono grass (*Brachiaria mutica*), and concentrate, with ad libitum access to water. Fresh semen with motility above 55%, viability above 50%, and abnormality below 20% was diluted with various levels of added vitamin C. There were four treatments: egg yolk Tris without vitamin C addition (P0), egg yolk Tris + 0.10 g vitamin C (P1), egg yolk Tris + 0.20 g vitamin C (P2), and egg yolk Tris + 0.30 g vitamin C (P3). The quality of Saanen goat semen was evaluated based on motility, viability, and abnormality variables. The data obtained were analyzed using a Completely Randomized Design (CRD) with a one-way pattern and further tested with Duncan Multiple Range Test (DMRT) at a significance level of 5%. The results showed that the supplementation of vitamin C significantly ($p < 0.05$) affected sperm motility and viability but did not significantly affect sperm abnormality. The percentage of sperm motility in treatments P0, P1, P2, and P3 were $29.00 \pm 14.32\%$, $58.00 \pm 16.81\%$, $53.00 \pm 14.83\%$, and $23.00 \pm 7.58\%$ respectively. The percentage of sperm viability was $62.40 \pm 4.52\%$, $79.40 \pm 7.44\%$, $73.58 \pm 12.85\%$, and $57.85 \pm 12.96\%$ respectively. The percentage of sperm abnormality was $16.02 \pm 3.09\%$, $12.94 \pm 2.98\%$, $12.37 \pm 1.97\%$, and $12.19 \pm 2.29\%$ respectively. In conclusion, the supplementation of vitamin C into egg yolk Tris extender affected the motility and viability of semen during storage at 5°C for 72 hours. The supplementation of 0.1 g of vitamin C yielded the best results.

Keyword: Saanen goats, semen quality, Tris egg yolk extender, Vitamin C