PENGARUH PENAMBAHAN *VIRGIN COCONUT OIL* DALAM PENGENCER SEMEN BEKU TERHADAP MOTILITAS DAN VIABILITAS SPERMATOZOA SAPI PERANAKAN ONGOLE (PO)

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INTISARI

Kerusakan membran saat pembekuan semen beku disebabkan oleh *reactive oxygen species* (ROS) yang menyebabkan fosforilasi terhambat dan teroksidasinya lipid, protein maupun *deoxyribonucleic acid* (DNA). *Virgin coconut oil* (VCO) yang kaya akan antioksidan berpotensi menghambat peroksidasi lipid dan mengikat senyawa radikal bebas pada semen cair. Penelitian ini bertujuan untuk mempelajari efek penambahan VCO pada media semen beku terhadap motilitas dan viabilitas spermatozoa. Metode yang digunakan adalah dengan membagi empat perlakuan penambahan VCO pada pengencer semen beku. Grup 1 sebagai kontrol hanya menggunakan pengencer semen beku tanpa penambahan VCO, serta grup 2, 3, dan 4 masing-masing diberi penambahan VCO sebanyak 4%, 6%, serta 8%. Parameter yang diamati adalah tingkat motilitas dan viabilitas spermatozoa sapi Peranakan Ongole (PO). Data yang diperoleh dianalisis menggunakan *Statistic Product and Service Solution* (SPSS) versi 24 dan metode *One-Way Anova* dan *Duncan*. Hasil penelitian diperoleh rata-rata motilitas semen cair pada kontrol (P0) 47.00±1.73%, motilitas grup P1, P2, dan P3 secara berurutan 62.33±5.51, 69.33±7.10%, serta 65.00±3.00%. Sementara itu, untuk viabilitas semen cair pada P0 sebesar 50.33±2.08%, grup P1, P2, dan P3 sebesar 71.67±1.53%, 78.67±0.58%, dan 68.67±2.52% secara berurutan. Kesimpulan dari penelitian ini menunjukkan penggunaan VCO pada pengencer semen cair dapat meningkatkan persentase motilitas dan viabilitas sperma. Lebih lanjut penambahan 6% VCO pada pengencer semen cair memberikan hasil peningkatan viabilitas dan motilitas terbaik dalam riset ini.

Kata kunci : motilitas, sapi peranakan ongole, semen beku, viabilitas, *virgin coconut oil*

EFFECT OF VIRGIN COCONUT OIL IN FROZEN SEMEN DILUENT ON MOTILITY AND VIABILITY OF SPERMATOZOA IN ONGOLE BREED BULL

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ABSTRACT

Membrane damage during freezing of frozen semen is caused by reactive oxygen species (ROS) which causes inhibition of phosphorylation and oxidization of lipids, proteins and deoxyribonucleic acid (DNA). Virgin coconut oil (VCO), which is rich in antioxidants, has the potential to inhibit lipid peroxidation and bind free radical compounds in liquid semen. This research aims to study the effect of adding VCO to frozen semen media on spermatozoa motility and viability. The method used was to divide into four treatments the addition of VCO to frozen semen thinner. Group 1 as a control only used frozen semen diluent without the addition of VCO, and groups 2, 3, and 4 were each given the addition of 4%, 6%, and 8% VCO. The parameters observed were the level of motility and viability of spermatozoa of Ongole crossbreed cattle (PO). The data obtained were analyzed using Statistical Product and Service Solution (SPSS) version 24 and the One-Way Anova and Duncan methods. The research results showed that the average motility of liquid semen in controls (P0) was 47.00 ± 1.73%, the motility of groups P1, P2, and P3 was 62.33 ± 5.51, 69.33 ± 7.10%, and 65.00 ± 3.00%, respectively. Meanwhile, the viability of liquid semen at P0 was 50.33 ± 2.08%, groups P1, P2, and P3 were 71.67 ± 1.53%, 78.67 ± 0.58%, and 68.67 ± 2.52% respectively. The conclusion of this study shows that the use of VCO in liquid semen diluent can increase the percentage of sperm motility and viability. Furthermore, the addition of 6% VCO to the frozen semen diluent provided the best results in increasing viability and motility in this research.

Keywords : motility, frozen semen, ongole crossbreed cattle, viability, virgin coconut oil