

PENGARUH SUPLEMENTASI ALMOND OIL DAN LAVENDER OIL PADA BERBAGAI MEDIUM PENCUCIAN TERHADAP KUALITAS SPERMATOZOA POST-THAWING SAPI LIMOUSIN

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi *almond oil* dan *lavender oil* pada medium *direct swim up* sperma *post-thawing* terhadap kualitas *spermatozoa* sapi Limousin. Penelitian dilakukan di Laboratorium Fisiologi dan Reproduksi Ternak Fakultas Peternakan Universitas Gadjah Mada. Materi yang digunakan dalam penelitian ini adalah 40 *straw* sperma beku sapi Limousin berasal dari sapi berumur antara 4 sampai 6 tahun produksi UPTD BPBPTDK Dinas Pertanian DIY. Sperma beku di-*thawing* terlebih dahulu selama 30 detik pada suhu 37°C. Sperma *post-thawing* dicuci menggunakan metode *direct swim up* dengan medium *direct swim up skim base extender* (SBE), *phosphate buffered saline* (PBS) dan TRIS dengan penambahan suplementasi *almond oil* (AO), *lavender oil* (LO). Medium *direct swim up* terdiri dari 9 perlakuan yaitu SBE+L, SBE+AO 1%, SBE+LO 1%, PBS+L, PBS+AO 1%, PBS+LO 1%, TRIS+L, TRIS+AO 1%, TRIS+LO 1%. Satu *straw* digunakan untuk dua perlakuan. Pengujian kualitas *spermatozoa* meliputi motilitas, viabilitas, keutuhan tudung akrosom, integritas membran dan abnormalitas *spermatozoa*. Medium *direct swim up* diambil dan dimasukkan dalam tabung berisi sperma melalui dinding tabung. Tabung dimiringkan 45° dan diinkubasikan 40 menit pada suhu 30°C kemudian dikembalikan ke posisi berdiri. Lapisan tengah keatas diambil untuk diuji kualitas. Data yang diperoleh dianalisis menggunakan Rancangan Acak Lengkap (RAL) pola faktorial. Hasil analisis menunjukkan terdapat perbedaan yang signifikan pada motilitas ($P < 0,05$) tertinggi pada perlakuan TRIS+AO 1% yaitu $37,50 \pm 10,69\%$. Perbedaan yang signifikan pula pada integritas membran ($P < 0,05$) pada perlakuan SBE+AO 1% yaitu sebesar $83,75 \pm 8,08\%$. Kesimpulan dari penelitian ini bahwa suplementasi AO pada medium yang berbeda memberikan pengaruh pada motilitas dan integritas membran *spermatozoa*.

(Kata kunci: semen beku, *post-thawing*, *almond oil*, *lavender oil*, *direct swim up*, kualitas *spermatozoa*)

**THE EFFECT OF ALMOND OIL AND LAVENDER OIL
SUPPLEMENTATION ON VARIOUS DIRECT
SWIM UP MEDIUMS ON THE QUALITY
OF POST-THAWING BULL LIMOUSIN
SPERMATOZOA**

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ABSTRACT

The study aims to determine the effect of almond oil and lavender oil supplementation on direct swim up post-thawing sperm on the quality of bull Limousin spermatozoa. The research was conducted at the Laboratory of Animal Physiology and Reproduction, Faculty of Animal Science, Gadjah Mada University. The material used in this study was 40 frozen sperm straws for bull Limousin from aged between 4 and 6 years produced by the UPTD BPBPTDK DIY. Frozen sperm was thawed for 30 seconds at 37 °C. Post-thawing sperm were washed using the direct swim up method with medium direct swim up Skim Base Extender (SBE). Phosphate Buffer Saline (PBS) and TRIS with the supplementation of Almond Oil (AO) and Lavender Oil (LO). Medium direct swim up consisted of 9 treatments, namely SBE+L, SBE+AO 1%, SBE+LO 1%, PBS+L, PBS+AO 1%, PBS+LO 1%, TRIS+L, TRIS+AO 1%, TRIS+LO 1%. One straw was used for two treatments. Spermatozoa testing included motility, viability, acrosomal hood integrity, membrane integrity and spermatozoa abnormalities. Direct swim up medium was taken and put in a tube containing sperm from the tube wall. The tube is tilted at 45° and incubated for 40 minutes at 30°C then returned to a standing position. The upper middle layer was taken for quality testing. The data obtained were analyzed using a factorial completely randomized design (CRD). The results of the analysis showed that there was a significant difference in motility ($P<0.05$) the highest was in the TRIS+AO 1% treatment, which was $37.50\pm10.69\%$. The significant difference was also in the membrane integrity ($P<0.05$) in the SBE+AO 1% treatment, which was $83.75\pm8.08\%$. The conclusion of this study was that supplementation of AO in different media had an effect on the motility and integrity of spermatozoa membranes

Key words: Almond Oil, Levender Oil, Direct Swim Up, Post-thawing, Quality of Spermatozoa.