

PENGARUH SUPLEMENTASI *ALMOND OIL* DAN *BLACK SEED OIL* DALAM MEDIUM *DIRECT SWIM UP* SPERMA *POST-THAWING* TERHADAP KUALITAS SPERMATOZOA SAPI LIMOUSIN

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh suplementasi *Almond Oil* (AO) dan *Black Seed Oil* (BSO) dalam 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 penelitian yaitu 35 *straw* sperma beku sapi Limousin berumur antara 3 dan 4 tahun. Sperma beku di-*thawing* terlebih dahulu selama 30 detik pada suhu 37°C. Sperma *post-thawing* dicuci menggunakan metode *direct swim up* dengan medium *Skim Base Extender* (SBE) bersuplementasi AO atau BSO. Medium *direct swim up* terdiri dari tujuh perlakuan yaitu SBE (kontrol), SBE+AO 0,5%, SBE+AO 1%, SBE+AO 2%, SBE+BSO 0,5%, SBE+BSO 1%, SBE+BSO 2%. Data yang diperoleh meliputi motilitas, viabilitas, keutuhan tudung akrosom, integritas membran, dan abnormalitas tiap perlakuan dianalisis menggunakan uji Kruskal Wallis. Hasil analisis data menunjukkan bahwa penambahan suplementasi AO dan BSO terdapat perbedaan yang signifikan pada motilitas, keutuhan tudung akrosom dan integritas membran ($P < 0,05$). Hasil motilitas dan tudung akrosom tertinggi pada perlakuan SBE+BSO 1% masing-masing $30,00 \pm 9,13\%$ dan $95,11 \pm 1,30\%$. Integritas membran tertinggi dengan suplementasi AO 2% yaitu $83,14 \pm 11,74\%$. Dari penelitian dapat disimpulkan bahwa penambahan suplementasi BSO 1% dalam medium *direct swim up* memiliki pengaruh paling baik terhadap motilitas dan keutuhan tudung akrosom *spermatozoa*, sedangkan suplementasi AO 2% paling baik terhadap integritas membran.

Kata kunci: *Almond Oil*, *Black Seed Oil*, *Direct Swim Up*, *Post-thawing*, Kualitas *Spermatozoa*.

EFFECT OF ALMOND OIL AND BLACK SEED OIL SUPPLEMENTATION IN DIRECT SWIM UP MEDIUM POST-THAWING SPERM ON THE QUALITY OF LIMOUSIN BULL SPERMATOZOA

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ABSTRACT

The research aimed to know the effect of almond oil and black seed oil supplementation in direct swim up medium post-thawing sperm on the quality of Limousin bull spermatozoa. The research was conducted at the Laboratory of Animal Physiology and Reproduction, Faculty of Animal Science, University of Gadjah Mada. The materials used in this study were 35 straws of Limousin bull frozen sperm between 3 and 4 years old. The frozen sperm were thawed for 30 seconds at 37°C. Post-thawing sperm were washed using the direct swim up method with the medium of Skim Base Extender (SBE) supplemented with Almond Oil (AO) or Black Seed Oil (BSO). The direct swim up medium consisted of seven treatments, that were SBE (control), SBE+AO 0,5%, SBE+AO 1%, SBE+AO 2%, SBE+BSO 0,5%, SBE+BSO 1%, SBE+BSO 2%. Data observed were motility, viability, acrosome integrity, membrane integrity, and abnormality were analyzed using the Kruskal Wallis Test. The results of data analysis showed that the addition of AO and BSO supplementation were significantly different in motility, acrosomal integrity and membrane integrity ($P < 0,05$). The highest motility and acrosome integrity was obtained in SBE+BSO 1% treatment was $30,00 \pm 9,13\%$ and $95,11 \pm 1,30\%$. The highest membrane integrity with AO 2% supplementation was $83,14 \pm 11,74\%$. From the result it concluded that the supplementation of BSO 1% in the direct swim up medium had the best effect on the motility and acrosomal integrity of spermatozoa, while AO 2% supplementation was the best for membrane integrity.

Keywords: Almond Oil, Black Seed Oil, Direct Swim Up, Post-thawing, Quality of Spermatozoa.