

PENGARUH PENAMBAHAN EKSTRAK DAUN CENGKEH (*Syzygium aromaticum* L.) TERHADAP KUALITAS SEMEN BEKU POST THAWING PADA SAPI PERANAKAN ONGOLE

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan ekstrak daun cengkeh (*Syzygium aromaticum* L.) terhadap kualitas *semen beku post thawing* sapi Peranakan Ongole (PO). Penelitian ini dilaksanakan pada bulan Oktober 2022 sampai dengan Maret 2023 di Laboratorium Fisiologi dan Reproduksi Fakultas Peternakan UGM. Penelitian ini menggunakan 21 *straw semen* beku sapi PO yang diproduksi oleh Balai Inseminasi Buatan, Singosari, Jawa Timur. Daun cengkeh diekstraksi menggunakan metode maserasi. Ekstrak daun cengkeh ditambahkan pada *semen* yang telah di-*thawing*. Perlakuan meliputi 1) Tanpa penambahan ekstrak daun cengkeh (P0), 2) Penambahan 1% ekstrak daun cengkeh (P1), dan 3) Penambahan 3% ekstrak daun cengkeh (P2). Pengulangan dilakukan sebanyak tujuh kali. Data yang diamati meliputi motilitas (%), viabilitas (%), abnormalitas (%), dan tingkat kerusakan DNA (%). Data yang diperoleh dianalisis dengan Rancangan Acak Lengkap Pola Searah (RAL), kemudian dilanjutkan dengan uji *Duncan Multiple Range Test* (DMRT). Hasil penelitian menunjukkan bahwa penambahan ekstrak daun cengkeh berpengaruh nyata ($P < 0,05$) terhadap motilitas, viabilitas, dan abnormalitas, namun tidak berpengaruh nyata terhadap tingkat kerusakan DNA. Penambahan 3% ekstrak daun cengkeh (P2) menghasilkan motilitas ($63,71 \pm 3,68\%$), viabilitas ($89,79 \pm 2,12\%$), dan abnormalitas ($6,71 \pm 2,58\%$) terbaik. Rata-rata kerusakan DNA *spermatozoa* sapi PO yaitu $1,36 \pm 0,89\%$. Disimpulkan bahwa penambahan ekstrak daun cengkeh berpengaruh terhadap motilitas, viabilitas, dan abnormalitas *semen beku post thawing* sapi PO.

Kata Kunci: Abnormalitas, Ekstrak daun cengkeh, Motilitas, *Semen beku* sapi PO, Tingkat kerusakan DNA, Viabilitas.

THE EFFECT OF CLOVE LEAF EXTRACT (*Syzygium aromaticum* L.) ADDITION ON QUALITY OF POST-THAWING FROZEN SEMEN OF ONGOLE CROSSBREED CATTLE

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ABSTRACT

This research aimed to determine the effect of clove leaf extract (*Syzygium aromaticum* L.) extract addition on the quality of post-thawing frozen semen of Ongole Crossbreed (OC) cattle. The research was conducted from October 2022 to March 2023 at the Physiology and Reproduction Laboratory, Faculty of Animal Science, Universitas Gadjah Mada. Twenty one of frozen semen straw from OC cattle produced by the Artificial Insemination Center in Singosari were used in this research. Clove leaves were extracted using the maceration method. The clove leaf extract was added into the thawed semen. Treatments detail were; 1) Without the addition of clove leaf extract (P0), 2) Addition of 1% clove leaf extract (P1), and 3) Addition of 3% clove leaf extract (P2). Treatment was replicated seven times. The data were observed included motility (%), viability (%), abnormality (%), and DNA damage level (%). The data were analyzed using a Completely Randomized Design (CRD) in a One-Way Pattern, followed by Duncan Multiple Range Test (DMRT). The results showed that the addition of clove leaf extract had a significant effect ($P < 0.05$) on motility, viability, and abnormality, however, the extract addition had not significant effect on the level of DNA damage. The addition of 3% clove leaf extract (P2) resulted the best motility ($63.71 \pm 3.68\%$), viability ($89.79 \pm 2.12\%$), and abnormality ($6.71 \pm 2.58\%$). The avarage of DNA damage of OC cattle spermatozoa was $1.36 \pm 0.89\%$. It can be concluded that the addition of clove leaf extract have effect on the motility, viability, and abnormality of post-thawing frozen semen in OC cattle.

Keywords: Abnormality, Clove leaf extract, DNA damage level, Motility, OC cattle frozen semen, Viability.