

PENGARUH PENAMBAHAN EKSTRAK DAUN CENGKEH (*Syzygium Aromaticum* L.) TERHADAP KUALITAS SEMEN BEKU POST THAWING PADA SAPI ACEH

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INTISARI

Penelitian ini bertujuan untuk mengamati pengaruh penambahan ekstrak daun cengkeh terhadap kualitas *semen* beku *post thawing* sapi Aceh. Penelitian ini dilaksanakan pada bulan Januari 2023 sampai Maret 2023 di Laboratorium Fisiologi dan Reproduksi Fakultas Peternakan UGM. Penelitian ini menggunakan 21 *straw semen* beku sapi Aceh dari Balai Besar Inseminasi Buatan (BBIB), Singosari, Malang, Jawa Timur. Daun cengkeh diekstraksi menggunakan metode maserasi. Ekstrak daun cengkeh ditambahkan pada *semen* yang telah di-*thawing* pada air hangat 37°C dengan lama *thawing* 30 detik di *waterbath*. Perlakuan terdiri dari, *semen*+0% ekstrak daun cengkeh (P0); *semen*+2% ekstrak ekstrak daun cengkeh (P1); *semen*+4% ekstrak ekstrak daun cengkeh (P2). Penilaian *semen* dilakukan secara mikroskopis yang meliputi motilitas, viabilitas, abnormalitas, dan tingkat kerusakan DNA. Analisis data yang digunakan adalah Analisis Varians dengan Rancangan Acak Lengkap Pola Searah, kemudian dilanjutkan dengan uji *Duncan Multiple Range Test*. Hasil penelitian menunjukkan bahwa level ekstrak daun cengkeh berpengaruh nyata ($P < 0,05$) terhadap motilitas, viabilitas, dan abnormalitas, namun tidak berpengaruh nyata terhadap tingkat kerusakan DNA. Penambahan level ekstrak daun cengkeh 4% memberikan hasil terbaik pada motilitas ($60,71 \pm 3,45\%$), viabilitas ($53,93 \pm 0,79\%$), dan abnormalitas ($10,5 \pm 0,58\%$) dibandingkan perlakuan lainnya. Rata-rata kerusakan DNA spermatozoa sapi Aceh yaitu $2,21 \pm 1,27\%$. Disimpulkan bahwa penambahan ekstrak daun cengkeh 4% memberikan hasil terbaik terhadap motilitas, viabilitas, dan abnormalitas *semen* beku *post thawing* sapi Aceh. Kerusakan DNA spermatozoa sapi Aceh masih berada di bawah nilai standar DNA Fragmentasi Indeks (DFI),

Kata kunci: *Semen* beku, Sapi Aceh, Ekstrak daun cengkeh, Kualitas *Semen*, Kerusakan DNA

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

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ABSTRACT

This research aimed to observe the effect of clove leaf extract addition on the quality of post-thawing frozen semen Aceh cattle. The research was conducted from January 2023 to March 2023 at the Physiology and Reproduction Laboratory, Faculty of Animal Sciences, UGM. Twenty-one straws of semen were obtained from Artificial Insemination in Singosari, Malang, East Java. Clove leaves were extracted using the maceration method. The clove leaf extract was added to the thawed semen in warm water at 37°C for 30 seconds in a water bath. Treatments detail were; semen+0% clove leaf extract (P0); semen+2% clove leaf extract (P1); semen+4% clove leaf extract (P2). Semen evaluation was performed microscopically, including motility, viability, abnormality, and DNA damage level. The data were analyzed using a Analysis Variance with Completely Randomized Design with a One-Way Pattern, followed by Duncan's Multiple Range Test. The results showed that the level of clove leaf extract significantly affected ($P < 0.05$) motility, viability, and abnormality, however, the extract addition had not significant effect on the level of DNA damage. The addition of 4% clove leaf extract resulted in the best motility ($60.71 \pm 3.45\%$), viability ($53.93 \pm 0.79\%$), and abnormality ($10.5 \pm 0.58\%$) compared to the other treatments. The average of DNA damage of Aceh cattle spermatozoa was $2.21 \pm 1.27\%$. It can be concluded that the addition of 4% clove leaf extract produced the best results for motility, viability, and abnormality of post-thawing frozen semen of Aceh cattle. The DNA damage of Aceh cattle spermatozoa remained below the standard value of DNA Fragmentation Index (DFI).

Keywords: Frozen semen, Aceh cattle, Clove leaf extract, Semen quality, DNA damage.