

**Pengaruh Suhu dan Lama *Thawing* Terhadap Motilitas,
Viabilitas dan Abnormalitas *Spermatozoa* Beku
Ayam Kampung**

Okti Havivi

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Intisari

Penelitian ini bertujuan untuk mengetahui pengaruh suhu dan lama *thawing* terhadap motilitas, viabilitas dan abnormalitas sperma ayam kampung pada pengencer *Beltsville Poultry Semen Extender* (BPSE) yang disimpan pada nitrogen cair (suhu -196°C). Sperma dari 4 ekor ayam kampung jantan berumur 1 tahun sampai 1,5 tahun ditampung, diperiksa kualitas makroskopis dan mikroskopisnya. Kemudian ditambahkan pengencer *Beltsville Poultry Semen Extender* (BPSE) yang telah diberi agen krioprotektan berupa *Dimethylacetamid* (DMA) 5%, antibiotik Gentamicin $5\ \mu\text{g/ml}$ dan diekuilibrasikan pada suhu 5°C selama 60 menit. Sperma yang telah diekuilibrasikan dimasukkan ke dalam straw dan disimpan dalam nitrogen cair (suhu -196°C) selama 24 jam. Perlakuan *thawing* pada air dingin dengan suhu 4°C , air kran dan air hangat pada suhu 37°C masing-masing selama 30 detik dan 60 detik. Sperma hasil *thawing* kemudian dilihat kualitasnya. Data berupa kualitas sperma segar dianalisis dengan rerata dan standar deviasi, sedangkan data kualitas sperma setelah *thawing* dianalisis menggunakan Rancangan Pola Faktorial 3×2 dan dilanjutkan dengan uji DMRT (*Duncan's Multiple Range Test*). Hasil penelitian menunjukkan bahwa interaksi lama *thawing* dengan suhu *thawing* berpengaruh nyata terhadap motilitas, viabilitas, dan abnormalitas *spermatozoa*. Motilitas dan viabilitas sperma terbaik setelah *thawing* diperoleh pada suhu 4°C selama 60 detik berturut-turut adalah $46,00 \pm 8,94\%$ dan $60,70 \pm 14,91\%$. Abnormalitas sperma terendah diperoleh pada suhu 4°C selama 30 detik sebesar $15,40 \pm 1,52\%$. Berdasarkan hasil penelitian dapat disimpulkan bahwa *thawing* sperma pada suhu 4°C selama 60 detik menghasilkan motilitas dan viabilitas terbaik, sedangkan *thawing* suhu 4°C selama 30 detik memberikan abnormalitas paling rendah.

(Kata kunci : Ayam kampung, *Thawing*, Motilitas, Viabilitas, Abnormalitas, Semen beku)

The influence of Temperature and Duration Thawing on Viability, Motility and Abnormality of Chicken Frozen Spermatozoa

Okti Havivi

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Abstract

This research aimed to determine the effect of thawing temperatures and durations on native chicken sperm quality (motility, viability and abnormality) diluted in Beltsville Poultry Semen Extender (BPSE) and stored at -196°C . Sperm collected from 4 native chickens aged 1 to up 1.5 years old. Fresh sperm quality checked as macroscopic and microscopic then diluted in Beltsville Poultry Semen Extender (BPSE) which is added 5% Dimethylacetamide (DMA) as cryoprotectant agent. Sperm equilibrated at 5°C during 60 minutes after dilution and then stored in -196°C liquid nitrogen for 24 hours. Thawing conducted in water with temperatures of 4°C , tap water, and 37°C each for 30seconds and 6 seconds. Thawed sperm quality checked as motility, viability, and abnormality. Fresh sperm quality was analyzed with the mean and standard deviation, and thawed sperm quality analyzed using Factorial Design 3x2 and continued with DMRT (Duncan's Multiple Range Test). The results showed that interaction between thawing duration and thawing temperatures significantly affect motility, viability and sperm abnormalities. Best motility and viability after thawing at 4°C for 60 seconds were $46.00 \pm 8.94\%$, $60.70 \pm 14.91\%$ respectively, while the lowest abnormalities found at 4°C for 30 seconds were $15.40 \pm 1.52\%$. Based on the results of this study concluded that thawing the sperm at 4°C for 60 seconds produced the best motility and viability, while thawing temperature at 4°C for 30 seconds gave the lowest abnormality.

(Keywords: Chicken village, Thawing, Motility, Viability, Abnormality, Frozen Semen)