

**PENGARUH SUHU DAN LAMA *THAWING* TERHADAP MOTILITAS, VIABILITAS, ABNORMALITAS, DAN KEUTUHAN MEMBRAN PLASMA SPERMA BEKU SAPI SIMMENTAL**

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**INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh suhu dan lama *thawing* terhadap kualitas sperma beku sapi Simmental. Materi yang digunakan adalah sperma beku dari pejantan sapi Simmental sebanyak 45 *straw*. Sperma beku di-*thawing* menggunakan air dengan suhu 25°C, 37°C, dan 40°C, masing-masing selama 15 detik, 30 detik, dan 45 detik. Perlakuan tersebut dilakukan sebanyak lima kali pengulangan. Parameter yang diamati setelah *thawing* adalah motilitas, viabilitas, abnormalitas dan keutuhan membran plasma. Data yang diperoleh dianalisis menggunakan Rancangan Acak Lengkap Pola Faktorial 3x3. Faktor I yaitu suhu *thawing* (25°C, 37°C, dan 40°C), dan faktor II yaitu lama *thawing* (15 detik, 30 detik, dan 45 detik). Motilitas tertinggi pada suhu 37°C dan lama *thawing* 30 detik dengan rerata 43,00±6,21% dan 41,67±5,87%. Viabilitas tertinggi pada suhu 37°C dan lama *thawing* 15 detik dengan rerata 69,90±7,34% dan 67,28±8,40%. Abnormalitas terendah pada suhu 37°C dan lama *thawing* 30 detik dengan rerata 11,83±1,68% dan 13,34±3,15%. Keutuhan membran plasma tertinggi pada suhu 37°C dan lama *thawing* 15 detik dengan rerata 60,32±5,61% dan 58,04±6,77%. Metode *thawing* menggunakan suhu 37°C selama 15 detik atau 30 detik adalah cara terbaik untuk mendapatkan kualitas *spermatozoa post thawing*.

Kata kunci: Lama *thawing*, suhu *thawing*, sapi simmental, kualitas sperma

## **THE EFFECT OF TEMPERATURE AND *THAWING* DURATION ON THE MOTILITY, VIABILITY, ABNORMALITY, AND PLASMA MEMBRANE INTEGRITY OF SIMMENTAL BULL FROZEN SEMEN**

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### **ABSTRACT**

The research was conducted to find the effect of temperature and duration of thawing on frozen semen of Simmental bull. Forty-five straws from Simmental bull were thawed with temperature 25°C, 37°C, and 40°C. Each thawing was executed for 15 seconds, 30 seconds dan 45 seconds. Spermatozoa motility, viability, abnormality, and integrity of plasma membrane was observed under the microscope. Obtained data was analysed using Completely Randomized Design (CRD) 3x3. There were two factor indicator tested, the first factor was temperature (tested in 25°C, 37°C, and 40°C) and the second factor was thawing duration (tested in 15 seconds, 30 seconds, and 45 seconds). The highest motility was obtained on temperature 37°C and duration thawing 30 seconds that were 43.00±6.21% and 41,67±5,87% respectively. The highest viability was obtained on temperature 37°C and duration thawing 15 seconds that were 69,90±7,34% and 67,28±8,40% respectively. The lowest abnormality was obtained on temperature 37°C and duration thawing 30 seconds that were 11,83±1,68% and 13,34±3,15% respectively. The highest integrity of plasma membrane was obtained on temperature 37°C and duration thawing 15 seconds that were 60,32±5,61% and 58,04±6,77% respectively. Thawing at 37°C of water within 15 seconds or 30 seconds is the best method used to obtain the best quality of spermatozoa post thawing.

Key words: Thawing Duration, Thawing Temperature, Simmental Cattle, Semen Quality