



## **PENGARUH SUHU DAN LAMA *THAWING* TERHADAP KUALITAS SEMEN BEKU KAMBING PERANAKAN ETTAWA**

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### **INTISARI**

Penelitian ini dilakukan untuk mengetahui pengaruh suhu dan lama *thawing* yang berbeda terhadap kualitas semen beku kambing Peranakan Ettawa (PE). Penelitian di laksanakan di Laboratorium Balai Inseminasi Buatan Ungaran. Materi yang digunakan yaitu 48 buah *straw* beku (BIB UNGARAN INDRAJIT Q.48 KAMBING KALIGESING 2018). *Thawing straw* dilakukan pada air bersuhu 27, 32, 37, dan 42°C, masing-masing selama 15, 30, 45, dan 60 detik, dengan masing-masing pengulangan sebanyak 3 kali. Rancangan percobaan yang digunakan yaitu Rancangan Acak Lengkap pola faktorial 4x4. Apabila terdapat perbedaan nyata dilanjutkan dengan uji lanjut Duncan. Parameter yang diamati yaitu motilitas dan *recovery rate*. Hasil penelitian menunjukkan suhu *thawing*, lama *thawing*, serta interaksi antara suhu dan lama *thawing* berpengaruh signifikan terhadap motilitas dan *recovery rate* semen beku kambing PE ( $P < 0,05$ ). Rerata motilitas pada suhu *thawing* 27, 32, 37, dan 42°C berturut-turut adalah  $35,00 \pm 4,26\%$ ,  $34,58 \pm 4,50\%$ ,  $35,83 \pm 8,21\%$ , dan  $31,67 \pm 6,51\%$ . Rerata motilitas pada lama *thawing* 15, 30, 45, dan 60 detik berturut-turut adalah  $36,25 \pm 4,33\%$ ,  $39,17 \pm 5,25\%$ ,  $30,00 \pm 4,26\%$ ,  $31,67 \pm 6,15\%$ . Rerata *recovery rate* pada suhu *thawing* 27, 32, 37, dan 42°C berturut-turut adalah  $51,19 \pm 7,35\%$ ,  $49,41 \pm 6,43\%$ ,  $51,19 \pm 11,73\%$ , dan  $45,24 \pm 9,31\%$ . Rerata *recovery rate* pada lama *thawing* 15, 30, 45, dan 60 detik berturut-turut adalah  $51,79 \pm 6,18\%$ ,  $55,95 \pm 7,36\%$ ,  $44,05 \pm 8,53\%$ , dan  $45,24 \pm 8,79\%$ . Disimpulkan bahwa motilitas tertinggi dan *recovery rate* tertinggi semen beku kambing PE diperoleh pada perlakuan *thawing* 37°C selama 30 detik.

Kata kunci: Suhu *thawing*, Waktu *thawing*, Semen beku, Kambing PE, Motilitas, *Recovery rate*



## **THE EFFECT OF TEMPERATURE AND DURATION OF THAWING ON THE QUALITY OF FROZEN SEMEN OF ETTAWA-GRADE GOAT**

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### **ABSTRACT**

This research was aimed to determine the effect of different thawing temperatures and durations on frozen semen quality of Ettawa-grade (PE) goat. This research was conducted in Balai Inseminasi Buatan (BIB) Ungaran Laboratory. Forty-eight BIB's frozen straws (UNGARAN INDRAJIT Q.48 KAMBING KALIGESING 2018) were used in this research. The frozen semen were thawed on water at 27°C, 32°C, 37°C, dan 42°C, for 15, 30, 45, and 60 seconds, respectively; and each treatment was repeated 3 times. The data were analyzed using completely randomized design of 4x4 factorial. If there was significant difference result, the analyze was continued using Duncan's test. Motility and recovery rate of spermatozoa were measured in this study. The results showed thawing temperature, thawing duration, and the interaction between temperature and thawing duration had a significant effect on motility and recovery rate of frozen semen of goat PE ( $P < 0.05$ ). The motility of spermatozoa on 27, 32, 37, and 42°C of thawing temperature were  $35.00 \pm 4.26\%$ ,  $34.58 \pm 4.50\%$ ,  $35.83 \pm 8.21\%$ , and  $31.67 \pm 6.51\%$ , respectively. The motility of spermatozoa on 15, 30, 45, and 60 seconds of thawing duration were  $36.25 \pm 4.33\%$ ,  $39.17 \pm 5.25\%$ ,  $30.00 \pm 4.26\%$ ,  $31.67 \pm 6.15\%$ , respectively. The recovery rate of spermatozoa on 27, 32, 37, and 42°C of thawing temperature were  $51.19 \pm 7.35\%$ ,  $49.41 \pm 6.43\%$ ,  $51.19 \pm 11.73\%$ , and  $45.24 \pm 9.31\%$ , respectively. The recovery rate of spermatozoa on 15, 30, 45, and 60 seconds of thawing duration were  $51.79 \pm 6.18\%$ ,  $55.95 \pm 7.36\%$ ,  $44.05 \pm 8.53\%$ , and  $45.24 \pm 8.79\%$ , respectively. Conclusion, the highest motility and the highest recovery rate of frozen semen Ettawa-grade goat are obtained in thawing treatment 37°C for 30 seconds.

**Keywords:** thawing temperature, thawing duration, frozen semen, PE goat, motility, recovery rate