

ABSTRAK

RESPONS FISIOLOGIS DAN DAYA TAHAN PANAS PADA SAPI SIMPO DAN SAPI LIMPO DI KPT MAJU SEJAHTERA TANJUNG SARI LAMPUNG SELATAN

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Penelitian ini dilakukan dengan tujuan untuk membandingkan respons fisiologis dan daya tahan panas ternak sapi Simpo dan sapi Limpo di KPT Maju Sejahtera Kecamatan Tanjung Sari Lampung Selatan. Penelitian ini berlangsung dari bulan Februari sampai Maret 2022. Data penelitian menggunakan data primer dan data sekunder. Sampel yang digunakan sebanyak 120 ekor sapi betina Simpo dan Limpo yang ditentukan dengan purposive sampling. Peubah yang diamati ialah respons fisiologis ternak meliputi suhu rektal, frekuensi pernafasan, frekuensi denyut jantung, dan indeks daya tahan panas, serta iklim mikro kandang yang meliputi, suhu udara, kelembaban udara (RH), dan Temperature Humidity Index (THI). Data yang didapatkan dianalisis menggunakan uji beda dua rata-rata (Uji-t). Hasil penelitian ini menunjukkan rata-rata THI di lokasi penelitian sebesar 83,31. Rataan frekuensi respirasi pagi dan siang hari menunjukkan sapi Simpo lebih tinggi dibanding sapi Limpo yaitu $27,13 \pm 2,38$ kali/menit; $32,28 \pm 2,78$ kali/menit (sapi Simpo) dan $27,07 \pm 2,25$ kali/menit; $31,20 \pm 2,50$ kali/menit (sapi Limpo). Rataan frekuensi denyut jantung pagi dan siang hari menunjukkan sapi Simpo lebih tinggi dibanding sapi Limpo yaitu $56,43 \pm 4,84$ kali/menit; $68,07 \pm 4,67$ kali/menit (sapi Simpo) dan $56,03 \pm 6,50$ kali/menit; $67,13 \pm 4,58$ kali/menit (sapi Limpo). Rataan suhu rektal pagi menunjukkan sapi Simpo lebih tinggi dibanding sapi Limpo dan siang hari menunjukkan sapi Simpo lebih rendah dibanding sapi Limpo yaitu $37,86 \pm 0,26$ °C; $38,49 \pm 0,26$ °C (sapi Simpo) dan $37,85 \pm 0,09$ °C; $38,75 \pm 0,10$ °C (sapi Limpo). Rataan daya tahan panas sapi Simpo lebih tinggi dibanding Limpo dengan nilai sebagai berikut $2,21 \pm 0,06$ (sapi Simpo) dan $2,18 \pm 0,10$ (sapi Limpo). Dari penelitian ini dapat disimpulkan sapi Limpo memiliki daya tahan panas yang lebih baik dari sapi Simpo.

Kata kunci: Daya tahan panas, Denyut jantung, Respirasi, Respons fisiologis, suhu rektal.

ABSTRACT

Physiological Response and Heat Tolerance Coefficient in Simpo and Limpo Cattle in KPT Maju Sejahtera Tanjung Sari Lampung Selatan

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This study was conducted with the aim of comparing the physiological response and heat resistance of Simpo cattle and Limpo cattle in KPT Maju Sejahtera, Tanjung Sari District, South Lampung. This research took place from February to March 2022. The research data used primary data and secondary data. The samples used were 120 heifers Simpo and Limpo cows which were determined by purposive sampling. The observed variables were the physiological response of livestock which included rectal temperature, frequency, heart rate, and heat resistance index, as well as the microclimate of the cage which included air temperature, humidity (RH), and Temperature Humidity Index (THI). The data obtained were analyzed using the two average difference test (t-test). The results of this study indicate that the average THI in the study area is 83.31. The average respiration frequency in the morning and afternoon showed that Simpo cattle were higher than Limpo cattle, namely $27.13 \pm 2.38 \text{ min}^{-1}$; $32.28 \pm 2.78 \text{ min}^{-1}$ (Simpo cattle) and $27.07 \pm 2.25 \text{ min}^{-1}$; $31.20 \pm 2.50 \text{ min}^{-1}$ (Limpo cattle). The average heart rate in the morning and afternoon showed that Simpo cattle were higher than Limpo cattle, namely $56.43 \pm 4.84 \text{ min}^{-1}$; $68.07 \pm 4.67 \text{ min}^{-1}$ (Simpo cattle) and $56.03 \pm 6.50 \text{ min}^{-1}$; $67.23 \pm 4.58 \text{ min}^{-1}$ (Limpo cattle). The average morning rectal temperature showed that Simpo cattle were higher than Limpo cattle and during the day showed Simpo cattle were lower than Limpo cattle, namely $37.86 \pm 0.26 \text{ }^{\circ}\text{C}$; $38.49 \pm 0.26 \text{ }^{\circ}\text{C}$ (Simpo cattle) and $37.85 \pm 0.09 \text{ }^{\circ}\text{C}$; $38.75 \pm 0.10 \text{ }^{\circ}\text{C}$ (Limpo cattle). The average heat resistance of Simpo cattle was higher than Limpo with the following values 2.21 ± 0.06 (Simpo cattle) and 2.18 ± 0.10 (Limpo cattle). From this research, it can be said that Limpo cattle have better heat resistance than Simpo cattle.

Keywords: heat resistance, heart rate, physiological response, respiration, rectal temperature