

ABSTRAK

PENGARUH SUHU RUANG DAN KELEMBAPAN UDARA KANDANG TERHADAP FREKUENSI NAPAS, FREKUENSI DENYUT JANTUNG, DAN SUHU REKTAL DOMBA EKOR TIPIS

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Suhu dan kelembapan lingkungan merupakan faktor yang memengaruhi respons fisiologis ternak, terutama pada domba yang dipelihara di daerah tropis. Penelitian ini bertujuan untuk mengevaluasi pengaruh suhu ruang dan kelembapan udara kandang terhadap frekuensi napas, frekuensi denyut jantung, dan suhu rektal domba ekor tipis yang dipelihara secara intensif di kandang individual di Bangunjiwo, Kabupaten Bantul, Daerah Istimewa Yogyakarta. Penelitian menggunakan lima ekor domba ekor tipis jantan berumur 8–12 bulan dengan bobot badan 27–29 kg yang dipelihara selama dua bulan. Pengukuran suhu lingkungan, kelembapan udara, frekuensi napas, frekuensi denyut jantung, dan suhu rektal dilakukan pada pagi, siang, dan sore hari. Data dianalisis menggunakan uji Shapiro–Wilk, Kruskal–Wallis, One-Way ANOVA, uji lanjut Bonferroni, serta analisis regresi linear. Hasil penelitian menunjukkan bahwa suhu lingkungan, kelembapan udara, dan nilai *Temperature Humidity Index* (THI) berbeda nyata antarwaktu pengamatan ($P < 0,05$). Suhu lingkungan tertinggi terjadi pada siang hari ($33,04 \pm 0,46^{\circ}\text{C}$), sedangkan kelembapan tertinggi terjadi pada pagi hari ($99,00 \pm 0,00\%$). Frekuensi denyut jantung meningkat dari $76,00 \pm 12,65$ kali/menit pada pagi hari menjadi $95,20 \pm 9,55$ kali/menit pada siang hari ($P < 0,05$). Frekuensi napas juga meningkat dari $52,80 \pm 5,93$ kali/menit pada pagi hari menjadi $84,80 \pm 16,10$ kali/menit pada siang hari ($P < 0,05$). Suhu tubuh meningkat dari $38,56 \pm 0,25^{\circ}\text{C}$ pada pagi hari menjadi $39,08 \pm 0,41^{\circ}\text{C}$ pada siang hari ($P < 0,05$), namun masih berada dalam kisaran normal fisiologis domba. Analisis regresi menunjukkan hubungan positif antara suhu lingkungan dengan frekuensi denyut jantung, frekuensi napas, dan suhu rektal, meskipun hubungan terhadap suhu rektal relatif lemah. Meskipun terjadi peningkatan parameter fisiologis, suhu rektal tetap berada dalam kisaran normal fisiologis domba, yang menunjukkan bahwa domba ekor tipis mampu mempertahankan kestabilan suhu tubuh terhadap perubahan kondisi lingkungan.

Kata kunci: domba ekor tipis, frekuensi denyut jantung, frekuensi napas, kelembapan udara, suhu lingkungan, suhu rektal.

ABSTRACT

THE EFFECT OF ROOM TEMPERATURE AND HOME HUMIDITY ON RESPIRATION RATE, HEART RATE, AND RECTAL TEMPERATURE OF THIN-TAILED SHEEP

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Environmental temperature and humidity are factors that influence the physiological responses of livestock, especially sheep raised in tropical areas. This study aimed to evaluate the effect of room temperature and home air humidity on respiration rate, heart rate, and rectal temperature of thin-tailed sheep raised intensively in individual pens in Bangunjiwo, Bantul Regency, Yogyakarta Special Region. The study used five male thin-tailed sheep aged 8–12 months and weighing 27–29 kg, kept for two months. Measurements of ambient temperature, air humidity, respiration rate, heart rate, and rectal temperature were taken in the morning, afternoon, and evening. Data were analyzed using the Shapiro–Wilk test, Kruskal–Wallis test, One-Way ANOVA, Bonferroni's follow-up test, and linear regression analysis. The results showed that environmental temperature, air humidity, and Temperature Humidity Index (THI) values were significantly different between observation times ($P < 0.05$). The highest ambient temperature occurred during the day ($33.04 \pm 0.46^\circ\text{C}$), while the highest humidity occurred in the morning ($99.00 \pm 0.00\%$). Heart rate increased from 76.00 ± 12.65 beats/minute in the morning to 95.20 ± 9.55 beats/minute in the afternoon ($P < 0.05$). Respiratory rate also increased from 52.80 ± 5.93 beats/minute in the morning to 84.80 ± 16.10 beats/minute in the afternoon ($P < 0.05$). Body temperature increased from $38.56 \pm 0.25^\circ\text{C}$ in the morning to $39.08 \pm 0.41^\circ\text{C}$ in the afternoon ($P < 0.05$), but remained within the normal physiological range for sheep. Regression analysis showed a positive relationship between environmental temperature and heart rate, respiratory rate, and rectal temperature, although the relationship with rectal temperature was relatively weak. Despite the increase in physiological parameters, rectal temperature remained within the normal physiological range for sheep, indicating that thin-tailed sheep are still able to maintain stable body temperature in response to changing environmental conditions.

Keywords: thin-tailed sheep, heart rate, respiratory rate, air humidity, environmental temperature, rectal temperature.