

HUBUNGAN ANTARA NILAI *HEAT TOLERANCE COEFFICIENT* DENGAN KONSUMSI BAHAN KERING DAN PRODUKSI SUSU KAMBING PERAH LAKTASI DI KEMIRI, PAKEM, SLEMAN

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INTISARI

Penelitian ini bertujuan untuk mengetahui hubungan nilai *heat tolerance coefficient* (HTC) dengan konsumsi bahan kering dan produksi susu kambing Peranakan Etawah (PE). Penelitian dilakukan di peternakan rakyat Kemiri, Pakem, Sleman pada bulan September 2021 sampai Maret 2022. Materi yang digunakan meliputi 17 ekor induk kambing perah PE pada periode laktasi ke-1 sampai 2 dengan bobot badan rata-rata $47,30 \pm 7,5$ kg dan *body condition score* (BCS) 2,5 sampai 3. Pakan hijauan yang diberikan berdasarkan kebiasaan peternak, yaitu diberikan 2 kali/hari dengan pemberian pagi pukul 07.00 dan sore pukul 15.30 WIB. Variabel yang diamati meliputi konsumsi bahan kering (BK) dan bahan organik (BO), produksi susu, kondisi fisiologis ternak (frekuensi respirasi, frekuensi pulsus, dan temperatur rektal), kondisi fisiologi lingkungan (suhu dan kelembaban lingkungan), dan nilai HTC. Pakan yang diberikan dianalisis proksimat dan konsumsi pakan dianalisis BK dan BO. Data dianalisis secara deskriptif, kemudian data HTC, konsumsi bahan kering, dan produksi susu dianalisis lebih lanjut dengan metode analisis korelasi dan regresi. Hasil penelitian menunjukkan nilai rata-rata konsumsi BK kambing PE $2360,83 \pm 247,29$ g/ekor/hari, konsumsi BO $2138,06 \pm 222,74$ g BK/ekor/hari dan pemenuhan konsumsi bahan kering $(+)431,50 \pm 368,22$ g/ekor/hari. Rata-rata produksi susu kambing PE $847,54 \pm 300,27$ mL/ekor/hari. Hasil pengukuran fisiologi ternak diperoleh rata-rata temperatur rektal $38,96 \pm 0,32^\circ\text{C}$, frekuensi respirasi $32,54 \pm 5,06$ kali/menit, frekuensi pulsus $80,18 \pm 4,07$ kali/menit, dan HTC $2,33 \pm 0,22$. Hasil pengukuran fisiologi lingkungan diperoleh rata-rata temperatur lingkungan $23,61 \pm 0,93^\circ\text{C}$, kelembaban udara $83,13 \pm 6,67\%$, dan THI $72,83 \pm 1,23$. Hubungan HTC dengan konsumsi bahan kering memiliki nilai signifikansi 0,114 ($P > 0,05$) dan koefisien korelasi 0,426. Hubungan HTC dengan produksi susu memiliki nilai signifikansi 0,489 ($P > 0,05$) dan koefisien korelasi 0,194. Data ini menunjukkan bahwa nilai HTC tidak berpengaruh signifikan terhadap konsumsi bahan kering dan produksi susu. Berdasarkan hasil penelitian dapat disimpulkan bahwa *heat tolerance coefficient* memiliki hubungan yang lemah terhadap konsumsi bahan kering dan produksi susu kambing PE Kemiri, Pakem, Sleman.

Kata kunci: *Heat tolerance coefficient*, Kambing Peranakan Etawah, Konsumsi bahan kering, Produksi susu, *Temperature humidity index*

CORRELATION OF HEAT TOLERANCE COEFFICIENT WITH DRY MATTER INTAKE AND MILK PRODUCTION OF LACTATING DAIRY GOAT IN KEMIRI, PAKEM, SLEMAN

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ABSTRACT

The objectives of this study were to determine the relationship between *heat tolerance coefficient* (HTC) and *dry matter intake* as well as milk production of Etawah Crossbred dairy goats. The study held on smallholder dairy farmers in Kemiri, Pakem, Sleman from September 2021 to March 2022. The materials used include 17 Etawah Crossbred dairy goats in the 1st to 2nd lactation period with an average body weight 47.30 ± 7.5 kg and *body condition score* (BCS) 2.5 to 3. Forage feeds were given based on the habits of the local farmers, the feeds given 2 times/day, in the morning at 07.00 and in the afternoon at 15.30 AM. The variables observed included intake of dry matter (DM) and organic matter (OM), milk production, animal physiology condition (respiration frequency, pulse frequency, and rectal temperature), environmental physiology condition (environmental temperature and humidity), and HTC value. The feeds compositions were analyzed with proximate analysis and the feed intake were analyzed by DM and OM methods. Data were analyzed descriptively, then HTC value, dry matter intake, and milk production were further analyzed using correlation and regression methods. The study results showed the average intake of Etawah Crossed Breed goat DM was 2360.83 ± 247.29 g/head/day, OM intake was 2138.06 ± 222.74 g DM/head/day and DM fulfilment $(+)431.50 \pm 368.22$ g/head/day. The average production of Etawah Crossed Breed milk was 847.54 ± 300.27 mL/head/day. The results of goat physiology measurements included the average rectal temperature $38.96 \pm 0.32^\circ\text{C}$, respiration frequency 32.54 ± 5.06 times/minute, pulse frequency 80.18 ± 4.07 times/minute, and HTC 2.33 ± 0.22 . The results of environmental physiology measurements included an average environmental temperature of $23.61 \pm 0.93^\circ\text{C}$, humidity $83.13 \pm 6.67\%$, and THI 72.83 ± 1.23 . The relationship between HTC and DMI had a significance value of 0.114 ($P > 0.05$) and the correlation coefficient of 0.426. The relationship between HTC and milk production showed a significant value of 0.489 ($P > 0.05$) and the correlation coefficient of 0.194. Values of HTC had non-significant effect on dry matter intake and milk production. Based on the result, it showed that the HTC value had a low correlation with dry matter intake and milk production of Etawah Crossbred goats in Kemiri, Pakem, Sleman.

Keywords: Dry matter intake, Heat tolerance coefficient, Etawah crossbred goats, Milk production, Temperature humidity index