

HUBUNGAN *TEMPERATURE HUMIDITY INDEX* DENGAN PRODUKSI SUSU SAPI PERAH *MID* LAKTASI DI KELOMPOK TERNAK NGUDI MAKMUR, CANGKRINGAN, SLEMAN, YOGYAKARTA

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INTISARI

Penelitian ini bertujuan untuk mengetahui status fisiologis ternak, fisiologi lingkungan, konsumsi nutrien, produksi susu serta hubungan antara nilai *Temperature humidity index* (THI) dengan produksi susu di Kelompok Ternak Ngudi Makmur, Koperasi Samesta, Cangkringan, Sleman, Yogyakarta. Penelitian ini dilaksanakan pada bulan September 2020 hingga Januari 2021 di Kelompok Ternak Ngudi Makmur, Koperasi Samesta dan Laboratorium Fakultas Peternakan Universitas Gadjah Mada. Penelitian ini menggunakan 12 sapi perah Peranakan Friesian Holstein (PFH) fase *mid* laktasi. Pakan yang digunakan adalah rumput odot, tanaman jagung, dan konsentrat produksi koperasi Samesta. Air minum diberikan secara *ad libitum*. Variabel yang diamati adalah konsumsi nutrien pakan (bahan kering dan bahan organik) status fisiologis ternak (frekuensi respirasi, frekuensi pulsus, dan temperatur tubuh), fisiologi lingkungan (suhu dan kelembaban lingkungan) dan produksi susu. Data dianalisis secara deskriptif, kemudian data THI produksi susu dianalisis lanjut dengan analisis regresi menggunakan *software* PSPP. Berdasarkan hasil pengamatan diperoleh data sebagai berikut: nilai rata-rata temperatur tubuh $37,0 \pm 0,2^{\circ}\text{C}$, frekuensi pulsus $75,7 \pm 4,7$ kali/menit, frekuensi respirasi $47,0 \pm 1,0$ kali/menit dan nilai THI sebesar $74,66 \pm 3,78$. Rata-rata konsumsi BK sapi PFH $15,43 \pm 1,25$ kg BK/ekor/hari dan konsumsi BO $12,90 \pm 1,18$ kg BO/ekor/Hari. Hasil rata-rata produksi susu $14,31 \pm 3,24$ l/ekor/hari. Hubungan THI dengan temperatur tubuh, frekuensi pulsus dan frekuensi respirasi berturut-turut memiliki nilai signifikansi 0,032 ($P < 0,05$), 0,001 ($P < 0,05$), dan 0,002 ($P < 0,05$). Hubungan THI dengan produksi susu memiliki nilai signifikansi sebesar 0,024 ($P < 0,05$) artinya THI berpengaruh nyata terhadap produksi susu. Kesimpulan dari penelitian ini adalah sapi PFH memiliki nilai THI yang menunjukkan tingkat *mild stress* pada sapi perah serta nilai THI yang berkorelasi positif terhadap produksi susu.

Kata kunci: Kelembaban, Peternak rakyat, Produksi susu, Sapi perah laktasi, Suhu, *Temperature Humidity Index*.

CORRELATION BETWEEN TEMPERATURE HUMIDITY INDEX AND MILK PRODUCTION OF MID LACTATING DAIRY DATTLE IN NGUDI MAKMUR DAIRY FARMER COMMUNITY, CANGKRINGAN, SLEMAN, YOGYAKARTA

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ABSTRACT

The objective of this research was to know physiological status of dairy cattle, environmental physiology value, nutrient consumption, milk production and correlation between temperature humidity index (THI) value and milk production. This research was conducted in September 2020 until Januari 2021 in Ngudi Makmur Dairy Farmer Community, Samesta Cooperation and Laboratory of Faculty of Animal Science Universitas Gadjah Mada. This study involved 12 Friesian Holstein Crossbred dairy cattles on mid lactation period. They were fed with dwarf elephant grass, corn stover and concentrate that produced by Samesta Cooperation. Drinking water were given ad libitum. The observed variable were feed nutrient consumption (dry matter and organic matter), physiological status of cattle (respiration rate, pulse rate and body temperature), environmental physiology (temperature and humidity) and milk production. The data was analyzed by descriptive method, afterwards THI value and milk production were continued analyze on regression linear with PSPP Software. The result of this study was: average of body temperature $37,0 \pm 0,2^{\circ}\text{C}$, pulse rate $75,7 \pm 4,7$ times per minute, respiration rate $47,0 \pm 1,0$ times per minute and THI value was $74,66 \pm 3,78$. Average dry matter intake of cattle was $15,43 \pm 1,25$ kg DM per head per day and organic matter intake $12,90 \pm 1,18$ kg OM per head per day. The average value of milk production was $14,31 \pm 3,24$ liter per head per day. Correlation between THI value and body temperature, pulse rate and respiration rate in order has significance value 0,032 ($P < 0,05$), 0,001 ($P < 0,05$), and 0,002 ($P < 0,05$). Correlation between THI value and milk production took significance value 0,024 ($P < 0,05$) so that THI value has significant effect to milk production. The conclusion of this research was the THI value of Friesian Holstein Crossbred cattle in Ngudi Makmur Dairy Farmers Community showed mild stress due to average THI value and it is shown that THI value has positive correlation towards milk production.

Keywords: Humidity, Small holder, Milk production, Lactating dairy cattle, Temperature, *Temperature Humidity Index*.