

HORMON KORTISOL SAPI PERANAKAN FRIESIAN HOLSTEIN YANG KAWIN BERULANG DI UNIT PELAKSANA TEKNIS TERNAK PERAH FAKULTAS PETERNAKAN UNIVERSITAS GADJAH MADA

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INTISARI

Penelitian ini bertujuan untuk mengetahui profil hormon kortisol pada sapi perah Peranakan Friesian Holstein (PFH) yang mengalami kawin berulang di Unit Pelaksana Teknis (UPT) Ternak Perah Fakultas Peternakan Universitas Gadjah Mada. Materi penelitian yang digunakan adalah enam ekor sapi peranakan Friesian Holstein UPT Ternak Perah, yang terdiri dari sapi kawin berulang dan normal dengan berat badan 400 sampai 450 kilogram. Syarat ditentukannya kawin berulang yaitu sapi memiliki *service per conception* (S/C) lebih dari 3. *Vaginal smear* dilakukan setiap hari selama dua kali siklus estrus untuk identifikasi fase siklus estrus. Sampel darah diambil satu kali pada fase estrus, disertai dengan pengambilan data fisiologis ternak. Darah disentrifuge pada kecepatan 3000 rpm selama 10 menit. Sampel plasma darah diuji menggunakan teknik *enzyme linked immuno-sorbent assay* (ELISA) dengan kit hormon kortisol (DRG, Jerman) untuk mengetahui kadar hormon kortisol. Data dianalisis dengan *independent sampel T-test* untuk mengetahui pengaruh hormon kortisol terhadap sapi yang mengalami kawin berulang. Hasil penelitian menunjukkan rata-rata kadar hormon kortisol pada sapi yang kawin berulang yaitu $6,790 \pm 1,732$ ng/ml, sedangkan sapi tidak kawin berulang memiliki hormon kortisol $3,200 \pm 1,112$ ng/ml. Hasil analisis menunjukkan kadar hormon kortisol memberikan pengaruh yang nyata ($p < 0,05$) pada peristiwa kawin berulang. Frekuensi pulsus, respirasi, dan temperatur rektal kedua kelompok sapi dalam kisaran normal. Frekuensi pulsus, respirasi, dan temperatur rektal pada sapi kawin berulang yaitu $57 \pm 7,573$ kali/menit, $33 \pm 2,519$ kali/menit, dan $38,20 \pm 0,100^\circ\text{C}$ sedangkan pada sapi normal yaitu $56 \pm 7,507$ kali/menit, $31 \pm 1,632$ kali/menit, dan $38,70 \pm 0,458^\circ\text{C}$. Dapat disimpulkan hormon kortisol berpengaruh pada sapi yang mengalami kawin berulang.

(Kata kunci: hormon kortisol, kawin berulang, sapi perah PFH).

**CORTISOL HORMONE IN REPEAT BREEDER OF FRIESIAN HOLSTEIN
GRADE COWS IN DAIRY PROCESSING UNIT IN FACULTY
OF ANIMAL SCIENCE UNIVERSITAS GADJAH MADA**

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ABSTRACT

The study was done to determine the profile of cortisol hormone in repeat breeder of Holstein Friesian grade cows. Six of Friesian Holstein grade cows, 400 to 450 kilograms of weight raised in Dairy Processing Unit, Faculty of Animal Science, Universitas Gadjah Mada were used in this research. Cows were determined as repeat breeder when cows had service per conception (S/C) more than 3. Vaginal smear was done every day during two phases for estrous cycle identification. Blood samples were collected at estrus phase along with physiological data collection. Blood samples were centrifuged at 3000 rpm for 10 minutes. Blood plasma samples were tested using enzyme linked immuno-sorbent assay (ELISA) using cortisol hormone kit (DRG, Germany) to determine levels of cortisol hormone. Data were analyzed using independent samples T-test to determine effect of cortisol hormone on repeat breeder cows. The results showed that levels of cortisol hormone in repeat breeder cows were higher than normal cows ($p < 0,05$). Average level of cortisol hormone in repeat breeder cows were 6.790 ± 1.732 ng/ml, whereas cortisol hormone of normal cows were 3.200 ± 1.112 ng/ml. Pulse, respiration, and body temperature both of group cows were in normal range. Pulse, respiration, and body temperature of repeat breeder cows were 57 ± 7.573 times/minute, 33 ± 2.519 times/minute, $38.20 \pm 0.100^\circ\text{C}$, while normal cows were $56 \pm 7,507$ times/minute, 31 ± 1.632 times/minute, and $38.70 \pm 0.458^\circ\text{C}$. It can be concluded that cortisol hormone has an effect in repeat breeder cows.

(key words: cortisol hormone, repeat breeding, Friesian Holstein grade cows)