

KAJIAN AKTIVITAS OVARIUM SAPI BALI SELAMA SIKLUS ESTRUS PADA SISTEM PEMELIHARAAN SEMI INTENSIF

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Intisari

Sistem pemeliharaan sapi Bali di Nusa Tenggara Timur (NTT) secara umum adalah sistem semi intensif. Sistem pemeliharaan sapi berpengaruh terhadap penampilan reproduksi sapi. Penampilan reproduksi merupakan manifestasi klinis dari aktivitas ovarium yang meliputi perkembangan folikel, korpus luteum, sintesis dan sekresi estrogen serta progesteron. Penelitian ini dilakukan untuk mengetahui dinamika folikel ovarium, copus luteum, profil hormon estrogen dan progesteron selama siklus estrus sapi Bali pada sistem pemeliharaan semi intensif. Pengamatan dinamika folikel ovarium dilakukan terhadap 15 ekor induk sapi Bali yang terseleksi dari peternakan rakyat di Boawae Nagekeo NTT, 7 ekor diantaranya dilakukan pemeriksaan hormon estrogen dan progesteron. Dinamika folikel ovarium, dilakukan dengan pemeriksaan per rektal setiap hari pada kedua ovarium, dimulai dari hari ke-0 sampai hari ke-0 dari siklus estrus berikutnya. Setelah ovulasi, palpasi per rektal untuk memonitoring folikel dominan pada kedua ovarium dilakukan setiap hari pada jam 07.00 wita. Identifikasi gelombang folikel berdasarkan keberadaan folikel dominan selama siklus estrus. Ukuran diameter folikel dominan dilakukan dengan estimasi pada pemeriksaan per rektal kemudian beberapa diantaranya dikonfirmasi dengan USG transrektal *real-time* frekuensi probe 6.5-MHz. Analisa hormon estrogen dan progesteron dilakukan dengan metode ELISA. Pengambilan sampel darah untuk analisa hormon estrogen dilakukan setelah pemeriksaan per rektal, dimulai pada H0, H1, H9, H11, H14 dan H18 dari siklus estrus, sedangkan pengambilan darah untuk analisa hormon progesteron dilakukan pada H0, H1, H4, H10 dan H18. Folikel dominan gelombang pertama (6-9 mm) dideteksi pada hari ke-10.13 ± 0.83 dan folikel dominan gelombang kedua (10-13 mm) pada hari ke-18.26 ± 0.59 siklus estrus. Konsentrasi estrogen meliputi 158.25 ± 27.25 pg/ml; 142.01 ± 17.19 pg/ml; 144.76 ± 13.69 pg/ml; 148.89 ± 27.87 pg/ml; 141.45 ± 13.36 pg/ml; 157.16 ± 20.63 pg/ml masing-masing secara berurutan pada hari ke-0, 1, 9, 11, 14, 18 siklus estrus. Konsentrasi progesteron meliputi 0.77 ± 0.09 ng/ml; 1.43 ± 1.46 ng/ml; 2.49 ± 1.68 ng/ml; 9.50 ± 3.74 ng/ml; 0.80 ± 0.13 ng/ml masing-masing secara berurutan pada hari ke-0, 1, 4, 10, 18 siklus estrus. Sapi Bali pada sistem pemeliharaan semi intensif memiliki dua gelombang folikel setiap siklus estrus serta adanya hubungan antara keberadaan folikel dan corpus luteum terhadap konsentrasi estrogen dan progesteron.

Kata kunci: aktivitas ovarium, estrogen, progesterone, siklus estrus, sapi Bali, semi intensif.

A STUDY OF BALI CATTLE OVARIAN ACTIVITY DURING ESTROUS CYCLE ON SEMI-INTENSIVE MAINTENANCE SYSTEM

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Abstract

Semi-intensive system is a common maintenance system for the Bali cattle in East Nusa Tenggara (NTT). Maintenance system affect the reproductive performance of cows. Reproductive performance is a clinical manifestation of activities including the development of ovarian follicles, the corpus luteum, the synthesis and secretion of estrogen and progesterone. This study was aimed to determine the dynamics of ovarian follicles, corpus luteum, the profile of estrogen and progesterone during the estrous cycle of Bali cattle on semi-intensive maintenance system. Observation of ovarian follicles dynamics were conducted on 15 cows derived from traditional husbandry in Boawae Nagekeo NTT, of which 7 selected cows were examined for estrogen and progesterone hormonal tests. The dynamics of ovarian follicles were performed by rectal examination daily on both ovaries, starting from day 0 to day 0 of the next estrous cycle. After ovulation, monitoring of the dominant follicle on both ovaries was done daily at 07.00 pm by per rectal palpation. Identification of follicle waves was based on the existence of dominant follicles during the estrous cycle. Diameter of the dominant follicle size was measured by estimation on rectal examination, which then some were confirmed by real-time transrectal ultrasound probe at 6.5 MHz frequency. Estrogen and progesterone hormones were analysed by ELISA. The blood samples for analysis of estrogen were collected at D0, D1, D9, D11, D14 and D18 of the estrous cycle, whereas blood samples for analysis of progesterone were collected at D0, D1, D4, D10 and D18. The dominant follicle of the first wave (6-9 mm) was detected at day 10.13 ± 0.83 and at day 18.26 ± 0.59 of estrous cycles for the dominant follicle of second wave (10-13 mm). The concentration of estrogen are 158.25 ± 27.25 pg/ ml; 142.01 ± 17.19 pg/ ml; 144.76 ± 13.69 pg/ ml; 148.89 ± 27.87 pg/ ml; 141.45 ± 13.36 pg/ ml; 157.16 ± 20.63 pg/ ml respectively at day 0, 1, 9, 11, 14, 18 of estrous cycle. The progesterone concentrations are 0.77 ± 0.09 ng/ ml; 1.43 ± 1.46 ng/ ml; 2.49 ± 1.68 ng/ ml; 9.50 ± 3.74 ng/ ml; 0.80 ± 0.13 ng/ ml respectively at day 0, 1, 4, 10, 18 of estrous cycles. Bali cattles on semi-intensive maintenance system has two follicular waves per estrous cycle and there is any relationship between the presence of the follicle and corpus luteum with the estrogen and progesterone concentration.

Keywords: ovarian activity, estrogen, progesterone, estrous cycle, Bali cattle, semi-intensive