

**THE EFFECT OF OVARIUM DIAMETERS, FOLICLE DIAMETERS
AND ESTRADIOL HORMONES ON REPRODUCTIVE APPEARANCE
OF PO AND SIMPO CATTLE**

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Abstract

National beef needs continue to increase from year to year. The high demand for beef is not balanced with the number of cattle population. Increasing the number of beef cattle population in Indonesia every year is not significant with the high demand for meat in Indonesia. This insignificant increase in population is caused by a decrease in fertility, infectious diseases, and a reduction in the amount of forage land. Factors that cause a decrease in cow fertility can not be separated from ovarian diameter, follicles and hormone levels of estradiol which can have an effect on the high variation in reproductive appearance. The parameters of cow's reproductive appearance are Service per Conception (S / C) and Calving Interval (CI). This study aims to describe the diameter of the ovaries and follicles in cattle, to find out the description of ovarian diameter, follicles and levels of estradiol hormones on variations in S / C and CI, to determine the ovarian and follicular diameters of the hormone estradiol levels. This study used 8 Simental PO (SimPO) breed cows and 9 Ongole Breeds (PO), had already had children, were not pregnant, 4-8 years old, Body Condition Score (BCS) 2.5-3.5, phase estrus peak, did not experience reproductive disorders, clear recordings and were in the area of people's farms in Jatinom Subdistrict, Klaten Regency, Central Java Province. Cows were examined for ovarian diameter and follicular diameter using ultrasonography and blood was taken to determine the hormone estradiol levels. S / C and CI data were obtained from recording artificial insemination cards. The data obtained were analyzed descriptively, t test and ANOVA. The results showed no differences in ovarian diameter and diameter of cow follicles SimPO and PO ($P > 0.05$). There were influences of ovarian and follicular diameter on the levels of estradiol in SimPO and PO cattle ($P < 0.05$). There was an effect of hormone levels of estradiol on S / C and CI ($P < 0.05$). There was an effect of ovarian and follicular diameter on S / C and CI ($P < 0.05$).

Key word: decreased fertility, ovarian size, follicle size, estradiol hormone levels, service per conception, calving interval, ultrasonography

PENGARUH DIAMETER OVARIUM, DIAMETER FOLIKEL DAN KADAR HORMON ESTRADIOL TERHADAP PENAMPILAN REPRODUKSI PADA SAPI PO DAN SIMPO

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Intisari

Kebutuhan daging sapi nasional terus meningkat dari tahun ke tahun. Kebutuhan daging sapi yang tinggi tidak diimbangi dengan jumlah populasi sapi. Peningkatan jumlah populasi sapi potong di Indonesia setiap tahunnya tidak signifikan dengan tingginya kebutuhan daging di Indonesia. Peningkatan jumlah populasi yang tidak signifikan ini disebabkan oleh penurunan fertilitas, penyakit infeksius, dan jumlah lahan hijau yang berkurang. Faktor-faktor yang menyebabkan penurunan fertilitas sapi tidak lepas dari diameter ovarium, folikel dan kadar hormon estradiol yang dapat berefek pada tingginya variasi penampilan reproduksi. Parameter penampilan reproduksi sapi yaitu *Service per Conception* (S/C) dan *Calving Interval* (CI). Penelitian ini bertujuan untuk mengetahui gambaran diameter ovarium dan folikel pada sapi, mengetahui gambaran diameter ovarium, folikel dan kadar hormon estradiol terhadap variasi S/C dan CI, mengetahui gambaran diameter ovarium dan folikel terhadap kadar hormon estradiol. Penelitian ini menggunakan sapi betina *breed* Simental PO (SimPO) 8 ekor dan Peranakan Ongole (PO) 9 ekor, sudah pernah beranak, tidak bunting, berumur 4-8 tahun, *Body Condition Score* (BCS) 2,5-3,5, fase puncak estrus, tidak mengalami gangguan reproduksi, rekording jelas dan berada di wilayah peternakan rakyat Kecamatan Jatinom, Kabupaten Klaten, Provinsi Jawa Tengah. Sapi diperiksa diameter ovarium dan diameter folikel menggunakan ultrasonografi dan dilakukan pengambilan darah untuk mengetahui kadar hormon estradiol. Data S/C dan CI diperoleh dari rekording kartu inseminasi buatan. Data yang diperoleh dianalisis secara deskriptif, uji t dan anova. Hasil penelitian menunjukkan tidak ada perbedaan diameter ovarium dan diameter folikel sapi SimPO dan PO ($P > 0.05$). Terdapat pengaruh diameter ovarium dan folikel terhadap kadar hormon estradiol pada sapi SimPO dan PO ($P < 0.05$). Terdapat pengaruh kadar hormon estradiol terhadap S/C dan CI ($P < 0.05$). Terdapat pengaruh diameter ovarium dan folikel terhadap S/C dan CI ($P < 0.05$).

Kata kunci : penurunan fertilitas, diameter ovarium, diameter folikel, kadar hormon estradiol, *service per conception*, *calving interval*, ultrasonografi