

PENGARUH UMUR TERHADAP PRODUKSI DAN KUALITAS SEMEN SAPI SIMMENTAL DI BALAI INSEMINASI BUATAN UNGARAN, JAWA TENGAH

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh umur terhadap produksi dan kualitas semen sapi Simmental yang dipelihara di Balai Inseminasi Buatan Ungaran. Penelitian menggunakan data sekunder kualitas semen sapi Simmental dari bulan Januari sampai Februari 2023. Pejantan sapi Simmental yang digunakan pada penelitian ini terdiri dari tiga ekor pejantan sapi Simmental berumur <6 tahun, tiga ekor pejantan sapi Simmental berumur 7 tahun, dan tiga ekor pejantan sapi Simmental berumur 8 sampai <10 tahun. Data penelitian diamati dari kualitas semen sapi pejantan meliputi Volume, Konsistensi, pH, Konsentrasi, Motilitas, dan Gerak massa. Data yang diperoleh dianalisis menggunakan Rancangan Acak Lengkap (RAL) pola searah. Jika terdapat perbedaan nyata antar kelompok umur, maka dilakukan uji lanjut *Duncan Multiple Range Test* (DMRT). Hasil menunjukkan bahwa umur memberikan perbedaan nyata ($p < 0,05$) pada volume dan gerak massa. Kelompok sapi umur muda memiliki volume $5,14 \pm 1,68$ cc, konsistensi $2,11 \pm 0,56$, pH $6,53 \pm 0,01$, konsentrasi $1141,78 \pm 416,88$ juta sel/ml, motilitas $46,01 \pm 39,95$ %, dan gerak massa $2,15 \pm 0,32$. Kelompok sapi umur sedang memiliki volume $6,28 \pm 0,10$ cc, konsistensi $1,46 \pm 0,40$, pH $6,40 \pm 0,19$, konsentrasi $746,37 \pm 208,06$ juta sel/ml, motilitas $30,69 \pm 4,94$ %, dan gerak massa $1,17 \pm 0,10$. Kelompok sapi umur tua memiliki volume $8,36 \pm 0,79$ cc, konsistensi $1,73 \pm 0,31$, pH $6,50 \pm 0,05$, konsentrasi $920,06 \pm 212,93$ juta sel/ml, motilitas $61,98 \pm 7,67$ %, dan gerak massa $1,83 \pm 0,10$. Disimpulkan bahwa umur berpengaruh terhadap volume dan gerak massa semen sapi Simmental. Semen sapi Simmental dengan kualitas terbaik diperoleh pada umur muda (<6 tahun).

Kata Kunci: Umur, Sapi Simmental, Kualitas semen, Konsentrasi, Gerak massa.

THE EFFECT OF AGE ON SEMEN PRODUCTION AND QUALITY OF SIMMENTAL BULL AT THE ARTIFICIAL INSEMINATION CENTER IN UNGARAN, CENTRAL JAVA

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ABSTRACT

This study was aimed to determine the effect of age on semen production and quality of Simmental bull at the Artificial Insemination Center in Ungaran, Central Java. The study used secondary data on Simmental bull semen quality from January to February 2023. The Simmental bull studs used in this research consisted of three bulls aged <6 years, three bulls aged 7 years, and three bulls aged 8 to <10 years. Research data were observed for various parameters of bull semen quality, including Volume, consistency, pH, concentration, motility, and mass sperm motility. The data obtained were analyzed using a complete random design (RAL) unidirectional pattern, continued with Duncan Multiple Range Test (DMRT) if there was a significant result. The results showed that age provided a significant effect ($p < 0.05$) in volume and mass motility. The young age group had a volume of 5.14 ± 1.68 cc, consistency of 2.11 ± 0.56 , pH of 6.53 ± 0.01 , concentration of 1141.78 ± 416.88 million cells/ml, motility of $46.01 \pm 39.95\%$, and mass sperm motility of 2.15 ± 0.32 . The middle-aged group had a volume of 6.28 ± 0.10 cc, consistency of 1.46 ± 0.40 , pH of 6.40 ± 0.19 , concentration of 746.37 ± 208.06 million cells/ml, motility of $30.69 \pm 4.94\%$, and mass sperm motility of 1.17 ± 0.10 . The old age group had a volume of 8.36 ± 0.79 cc, consistency of 1.73 ± 0.31 , pH of 6.50 ± 0.05 , concentration of 920.06 ± 212.93 million cells/ml, motility of $61.98 \pm 7.67\%$, and mass sperm motility of 1.83 ± 0.10 . The conclusion of this study was that age affects on the volume and mass motility of Simmental bull semen. The best quality Simmental bull semen was found in the young age group (<6 years).

Keywords: Age, Simmental Cattle, Semen Quality, Concentration, Mass Movement.