

**ANALISIS MAKROSKOPIS DAN MIKROSKOPIS SEMEN SEGAR PADA
SAPI LIMOUSIN DAN SIMMENTAL UMUR 5, 7, DAN 8 TAHUN
DI BIB UNGARAN JAWA TENGAH**

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INTISARI

Kualitas semen sapi segar sangat penting sebagai bahan utama pembuatan semen beku untuk inseminasi buatan. Kualitas semen dipengaruhi oleh usia dan jenis *breed*. Perlu adanya analisis mengenai kualitas dan kuantitas semen segar sebagai bahan dasar semen beku. Tujuan penelitian ini untuk menganalisis kualitas makroskopis dan mikroskopis semen segar pada sapi Simmental dan Limousin usia 5, 7, dan 8 tahun di BIB Ungaran. Metode yang digunakan meliputi pemeriksaan kualitas semen secara makroskopis dan mikroskopis. Parameter uji makroskopis adalah volume dan pH semen, sedangkan uji mikroskopis meliputi motilitas dan konsentrasi semen. Berdasar hasil uji pada analisis makroskopis frekuensi volume semen tertinggi $9,53 \pm 1,17$ ml dan terendah $5,58 \pm 1,95$ ml. Nilai pH semen terendah yaitu $6,50 \pm 0,10$ sedangkan pH tertinggi $6,55 \pm 0,12$. Motilitas tertinggi yaitu $70,00 \pm 0,00\%$ dan terendah yaitu $42,50 \pm 21,37\%$, pada sapi Limousin usia 5 tahun (Bernard) $p < 0,05$. Konsentrasi paling rendah yaitu $888,30 \pm 323,90$ juta sel/ml dan rerata tertinggi $1379,00 \pm 216,60$ juta sel/ml. Volume, pH, dan konsentrasi semen segar dari keenam *bull* tergolong normal dan terdapat adanya perbedaan nyata baik dari sapi Simmental maupun Limousin. Lebih lanjut motilitas semen segar di bawah 60% tidak digunakan untuk proses selanjutnya. Semen segar dari sapi Simmental dan Limousin di BIB Ungaran dilakukan seleksi terlebih dahulu sehingga layak digunakan untuk pembuatan semen beku sesuai standar nasional Indonesia.

Kata kunci: Limousin, Simmental, Makroskopis, Mikroskopis, Semen segar

**MACROSCOPIC AND MICROSCOPIC ANALYSIS OF FRESH SEMEN
IN 5, 7, AND 8 YEARS OLD LIMOUSIN AND SIMMENTAL CATTLE AT
BIB UNGARAN, CENTRAL JAVA**

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ABSTRACT

The quality of fresh semen in cattle was very important as the main material for making frozen semen in artificial insemination. However, the quality of semen was influenced by age and breed. There needed to have been an analysis of the quality and quantity of fresh semen as the basis for frozen semen. The aim of the study was to the macroscopic and microscopic quality of fresh semen in 5, 7, and 8-year-old Simmental and Limousin cattle at BIB Ungaran. The methods used included examination of semen quality macroscopically and microscopically. Macroscopic test parameters were semen volume and pH, while microscopic tests included semen motility and concentration. Based on the results of macroscopic analysis, the highest semen volume frequency was 9.53 ± 1.17 ml and the lowest was 5.58 ± 1.95 ml. The lowest semen pH value was 6.50 ± 0.10 , while the highest was 6.55 ± 0.12 . The highest motility was $70.00 \pm 0.00\%$ and the lowest was $42.50 \pm 21.37\%$, in 5-year-old Limousin cattle (Bernard) $p < 0.05$. The lowest concentration was 888.30 ± 323.90 million cells/ml and the highest average was 1379.00 ± 216.60 million cells/ml. The volume, pH, and concentration of fresh semen from all six bulls were classified as normal, with significant differences observed between Simmental and Limousin cattle. Furthermore, fresh semen with motility below 60% was not used for further processing. Fresh semen from Simmental and Limousin cattle at BIB Ungaran underwent selection first to ensure suitability for frozen semen production according to Indonesian national standards.

Keywords: Limousin, Simmental, Macroscopic, Microscopic, Fresh semen