Session 7
The influence of the genotype on the quantitative traits of bovine semen

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Statistics of cattle breeding in Lithuania (January 1, 2008)

- Registered breeds
  - Black-and-white – 9
  - Red – 7
  - Other dairy – 7
  - Beef – 16
  - Aborigen – 4
- Overall cattle – 407.5 thousand
- Controlled – 193.9 thousand
- Pure breed beef cattle – 6932 in 213 farms

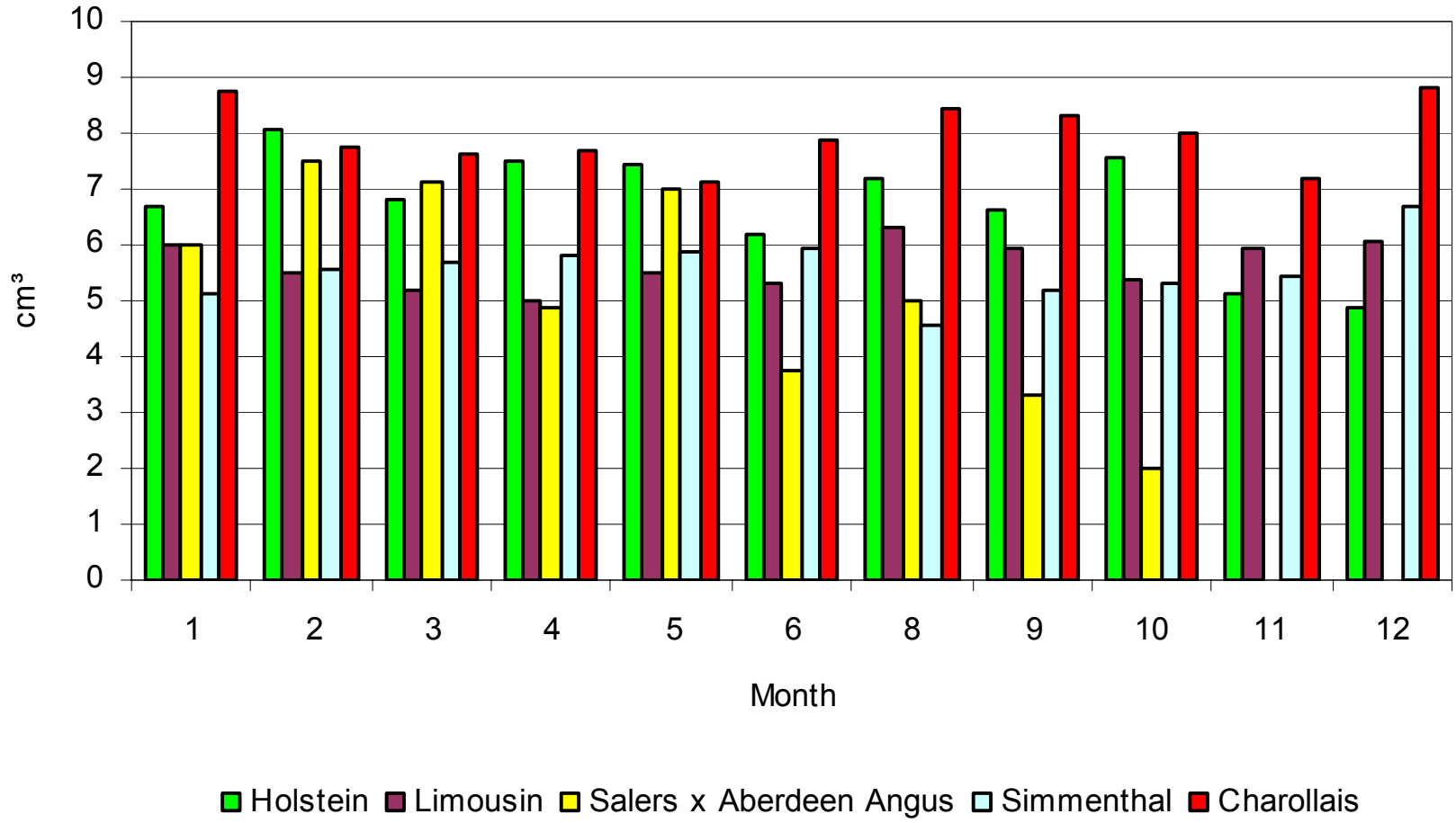
Material and Methods

- Farm – joint-stock company "Marijampolės regiono veislininkystė"
- Equipment for sperm freezing – a metal perforated shield fitted in the biostorage
- Form of semen package – polypropilene straw 0.25 cm^3 (ø2.0x0.25x100 mm)

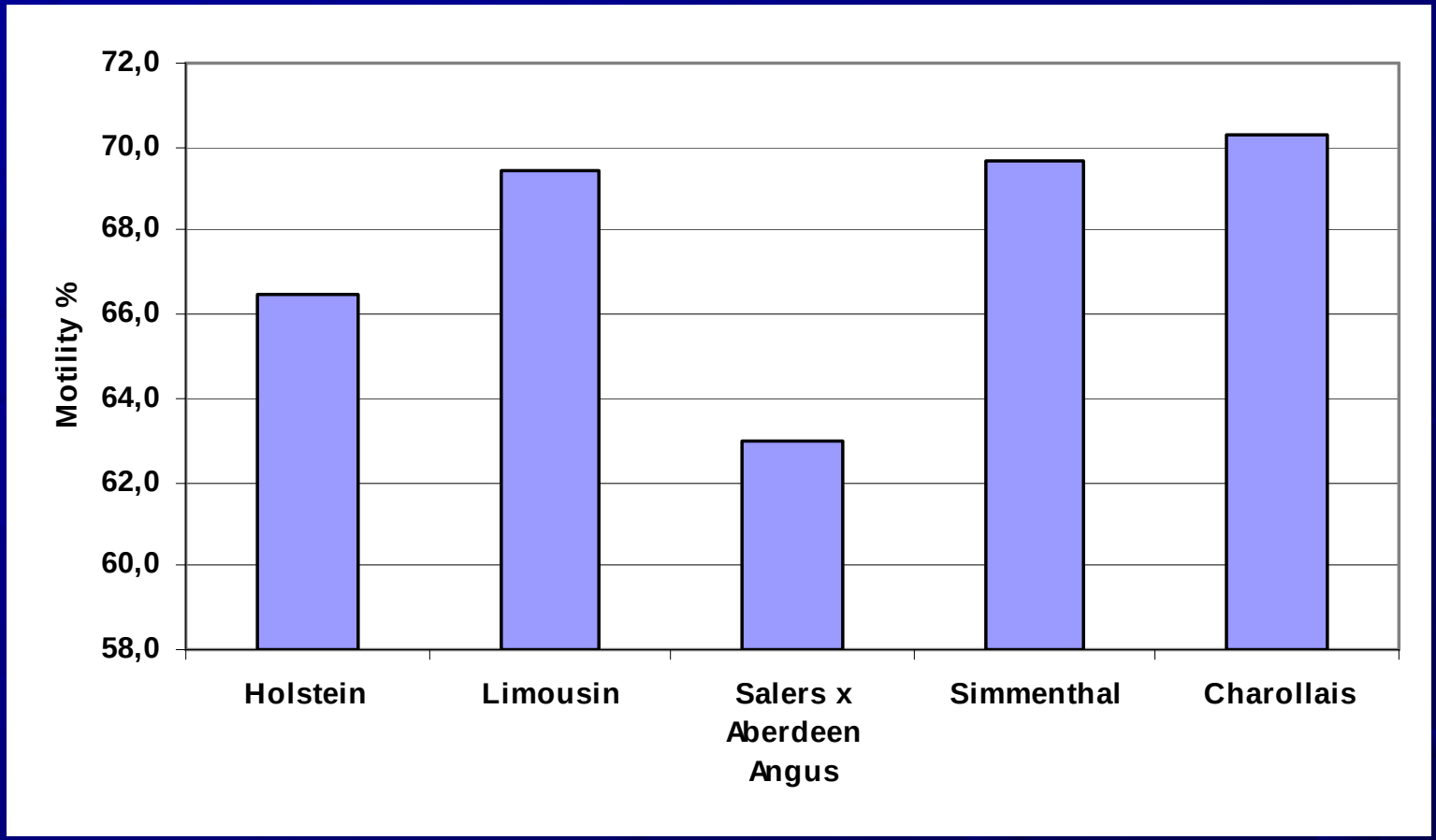
Extender composition used for bull's semen freezing

Ingredients	Quantity
Redistilled water, cm^3	100
Lactose, g	11.5
Egg yolk, cm^3	20
Glycerol, cm^3	5
Penicillin a.u./100 cm^3	50000

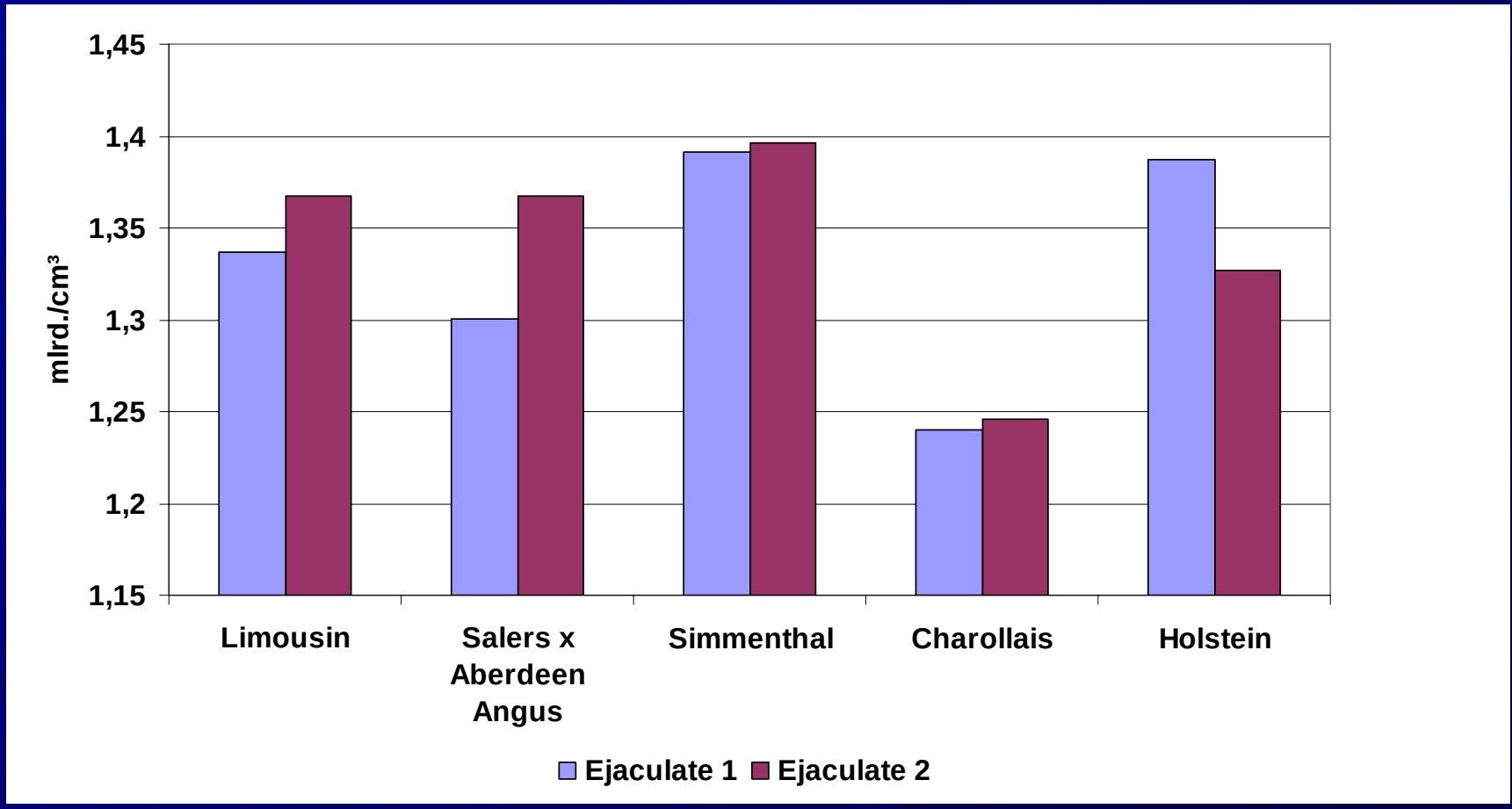
Average ejaculate volumes of different breeds



Average sperm motility in fresh semen (both ejaculates)



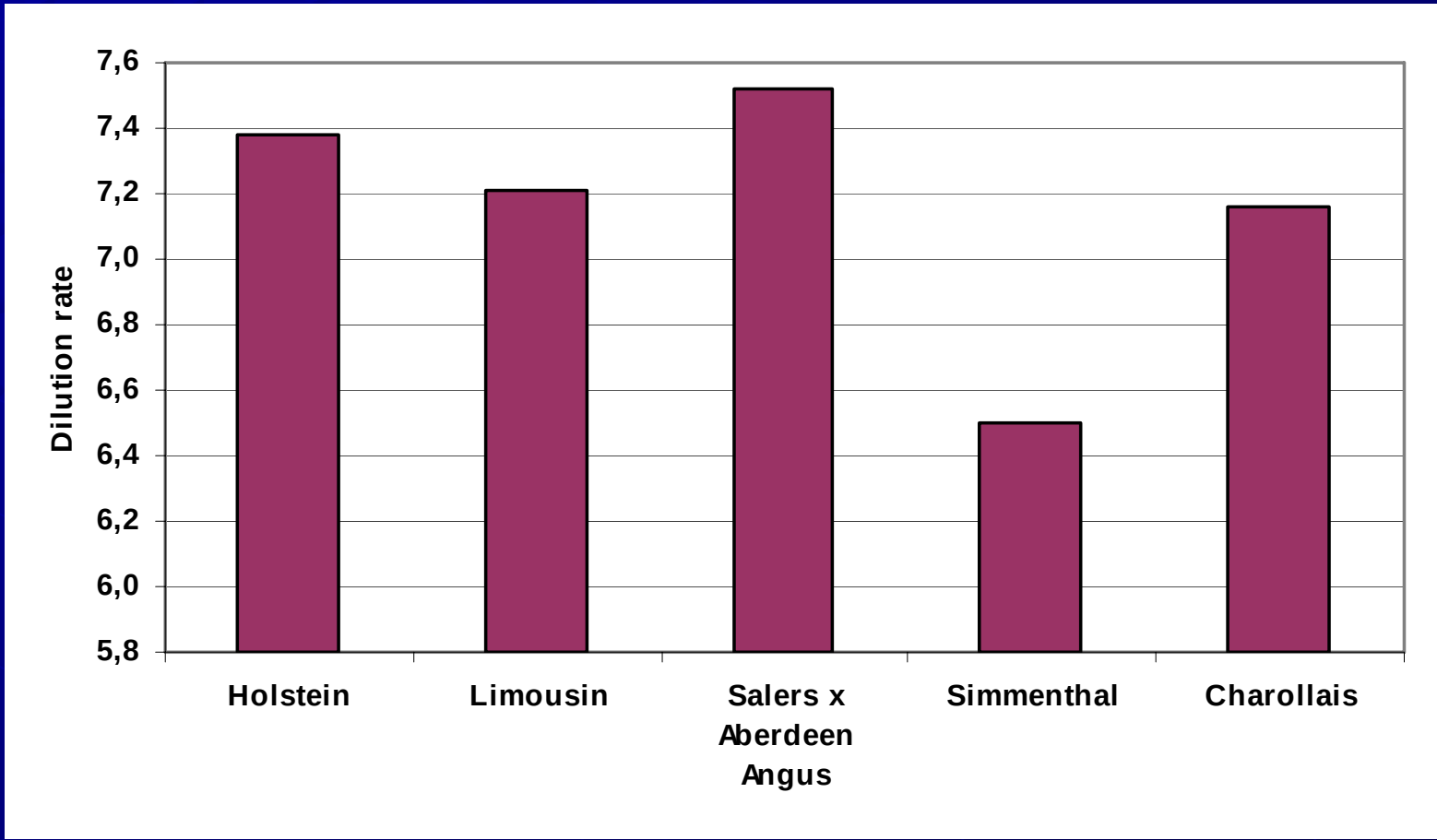
Average concentration of spermatozoa in fresh semen from different bovine breeds



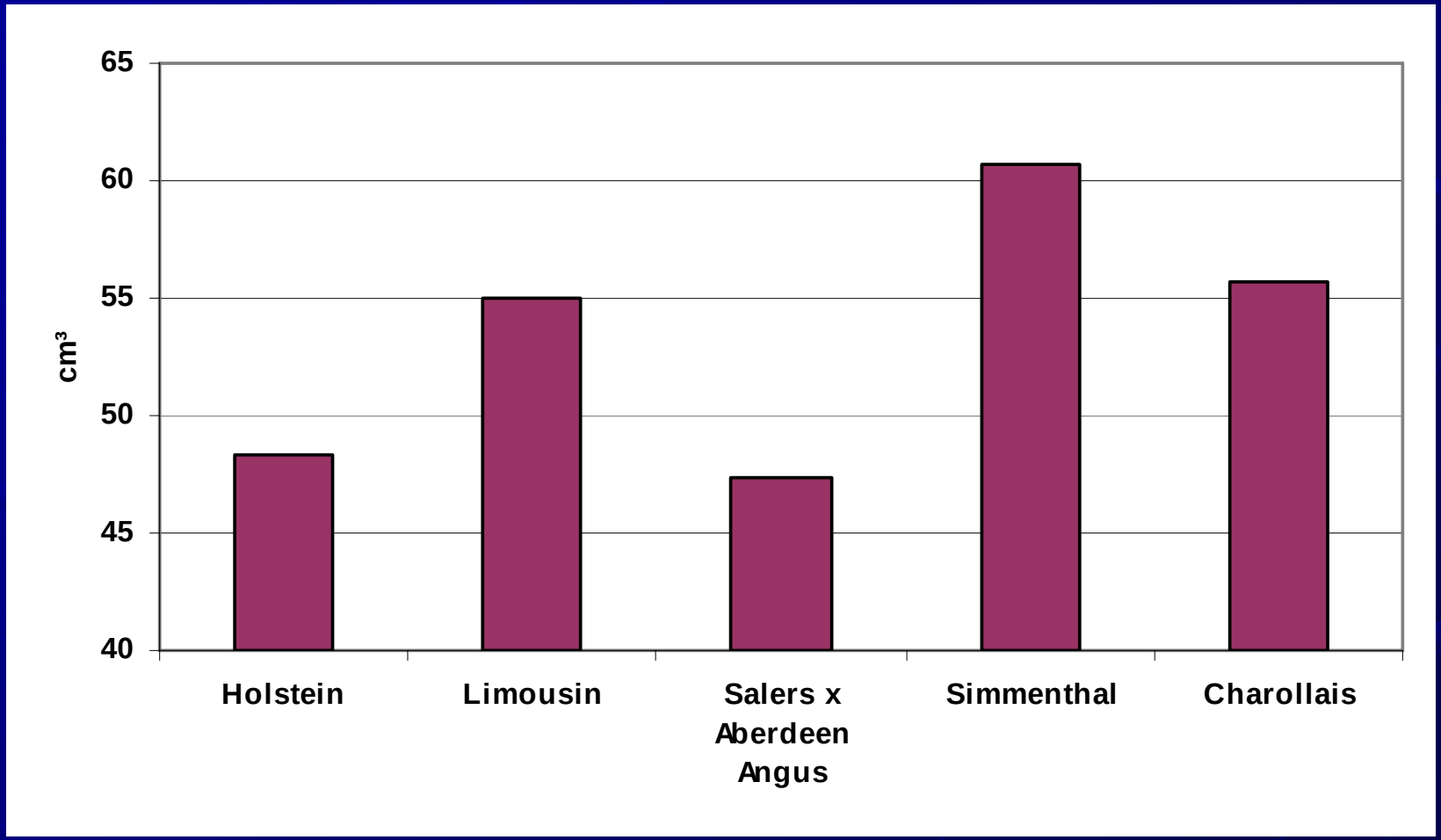
The main fresh bull's semen minimal requirements (LST 1647)

- ejaculation volume – no less than 1.5 cm^3
- density – not lower than 0.8 milliard/cm^3
- sperm motility – not lower than 70%

Average semen dilution rates for different breeds



Average volumes of diluted semen



Conclusions

- Both the genotype non season have any influence on the main quality indicators of fresh and frozen semen from beef and dairy bulls provided the conditions of feeding and housing are adequate.

- Charolais bulls had the highest average ejaculate volume (7.97 cm^3) and the lowest sperm concentration in fresh semen (1.24 $\times 10^9$ cm^3).

  Simmental bulls had the ejaculate volume (5.57 cm^3) similar with average of all beef bulls (5.59 cm^3), but the sperm concentration (1.39 $\times 10^9$ cm^3) in fresh semen was highest.

- Limousin bulls had the highest post-thaw sperm motility (40.9%). The lowest sperm survival rate was determined for Charolais bulls, but all the differences were insignificant.

- The highest amount of rejected non-diluted semen was that of Salers x Aberdeen Angus bulls. Feeding, housing and semen collection conditions are very important for the semen quality of these bulls.