INFLUENCE OF CONCENTRATION ON EQUINE FRESH SEMEN CONSERVATION

J. Ponthier, D. Bloomaert, S. Parrilla-Hernandez, F. Van Den Berghe, S. Deleuze
Equine Clinic, Veterinary Medicine Faculty, ULg University of Liège, Liège, Belgium
LINALUX-MLS, Centre Européen du Cheval, Vielsalm, Belgium

Introduction
Use of highly concentrated fresh semen:
• Deep horn insemination in:
  • low fertility mare
  • low quality fresh semen
• No data available about conservation

Material and methods
Animals: 1 Pony stallion, 4 sport stallions
Experimental design:
Semen collected 4 times
• Raw semen analysis (Concentration & motility with CASA)
  • Volume containing 110, 440, 880 x10^6 spz sampled
  • Extended (¼ semen, ¼ INRA96®)
  • Cushioned centrifugation (Ioxidanol, MaxiFreeze®)
  • Sperm-rich pellet re-extended in 1ml of supernatant
• Motility analysis after 8 & 24 hours:
  • Percent of Conservation of Total Motility (PCTM) = Total Motility at 8 or 24 hours/Total Motility in raw semen
  • Percent of Conservation of Progressive Motility (PCPM) = Progressive Motility at 8 or 24 hours/Progressive Motility in raw semen

Statistical methods: Friedmann test and Dunn’s post-test

Results
• Spermatozoa recovery rate lower in low concentration samples (p<0.001)
• Mean Final concentrations in groups: 70.45±30.59, 434.82±120.02 and 879.97±241.15 x10^6 spz/ml
• PCTM decreases after 8 hours of conservation in 800 x10^6 spz/ml samples (p<0.001)
• PCPM decreases after 24 hours of conservation in 800 x10^6 spz/ml samples (p<0.001)

Conclusions
• Conservation with high concentration is rapidly (8 hours) deleterious for total motility
• Progressive motility is only decreased in highly concentrated semen after 24 hours

HIGH CONCENTRATION FRESH SEMEN DOSES SUITABLE WITHIN 8 HOURS

METABOLISM OF EQUINE SPERMATOZOA SHOULD BE INVESTIGATED