

INFLUENCE OF CONCENTRATION ON EQUINE FRESH SEMEN CONSERVATION

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Introduction

Use of highly concentrated fresh semen:

- Deep horn insemination in :
 - low fertility mare
 - low quality fresh semen
- No data available about conservation
 - ➔ Shipping = ?

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 x 10⁶ spz sampled
- Extended (1/4 semen, 3/4 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)**

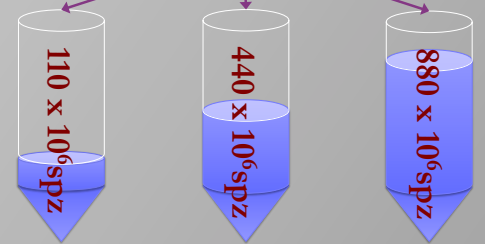
= Progressive Motility at 8 or 24 hours / Progressive Motility in raw semen

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



Raw semen analysis:

- Concentration
- Motility (CASA)

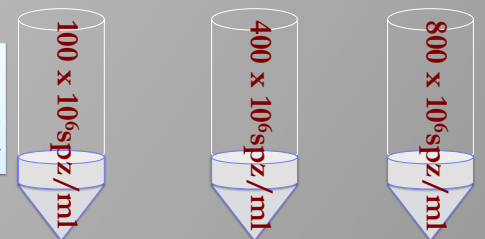


1/4 semen 3/4 extender (INRA96®)

Centrifugation

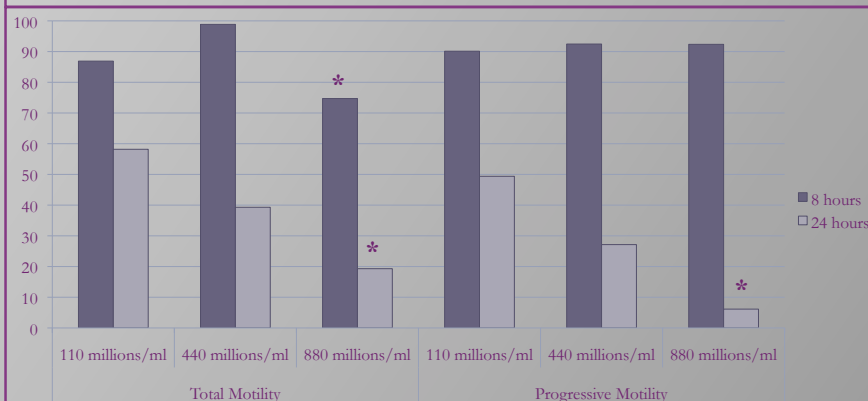
1000 x g
20 min

1ml Supernatant:
1/4 semen
3/4 extender



8 & 24 h: Motility (CASA)

Percent of Conservation of Total or Progressive Motility after 8 or 24 hours for each conservation concentration



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±241.15x10⁶spz/ml
- PCTM decreases after 8 hours of conservation in 800x10⁶spz/ml samples ($p < 0.001$)
- PCPM decreases after 24 hours of conservation in 800x10⁶spz/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 DOES SUITABLE WITHIN 8 HOURS
- ➔ METABOLISM OF EQUINE SPERMATOZOA SHOULD BE INVESTIGATED