GLUCOSE USE AND LACTATE PRODUCTION BY EQUINE FRESH SEMEN IN HUMAN AND EQUINE EXTENDERS

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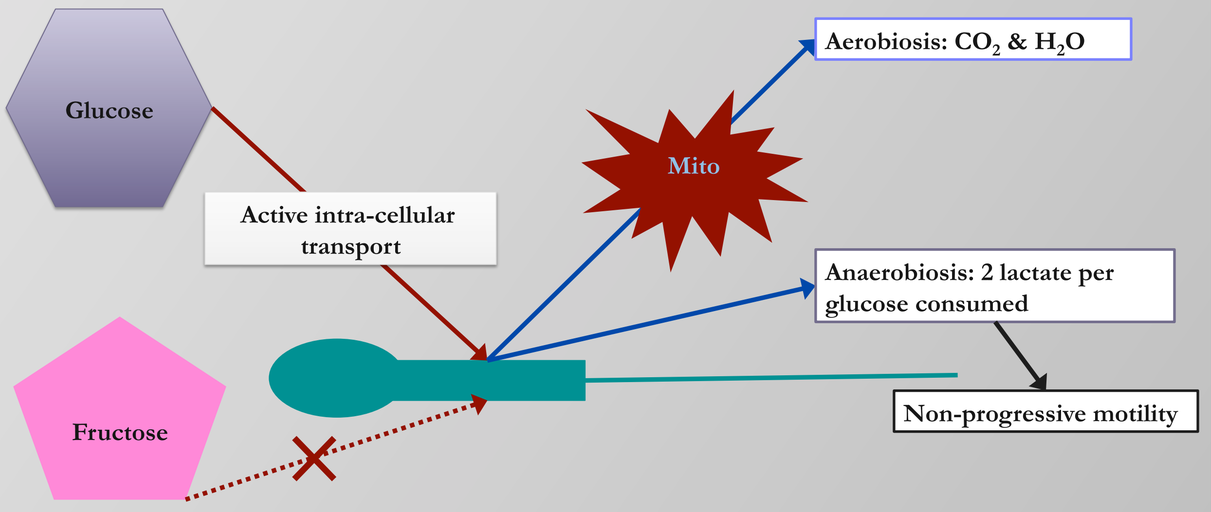
Introduction



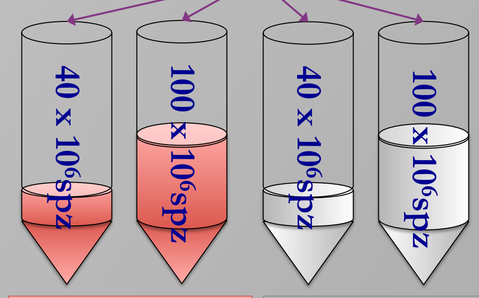
Aims of the study: to compare equine semen motility, glucose use and lactate production in:

Equine Semen Exenders	Human Semen Extenders
-**INRA96™:**	-**Allgradwash™:**
-Milk proteins	-No proteins
-Lactose & glucose ↑	-Glucose ↓ no lactose
-No lactate	-Lactate

Material and methods

20 ejaculates:
-5 stallions
-4 collections

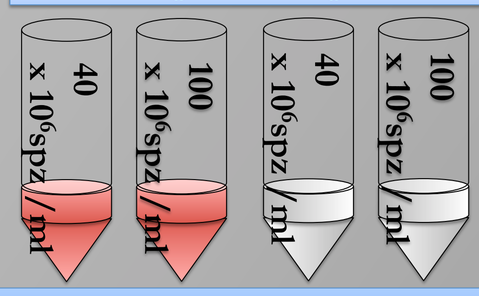
Raw semen analysis:
•Concentration
•Motility (CASA)



¼ semen ¾ extender

ALLGRADWASH | INRA96

Centrifugation 1000xg 20 min



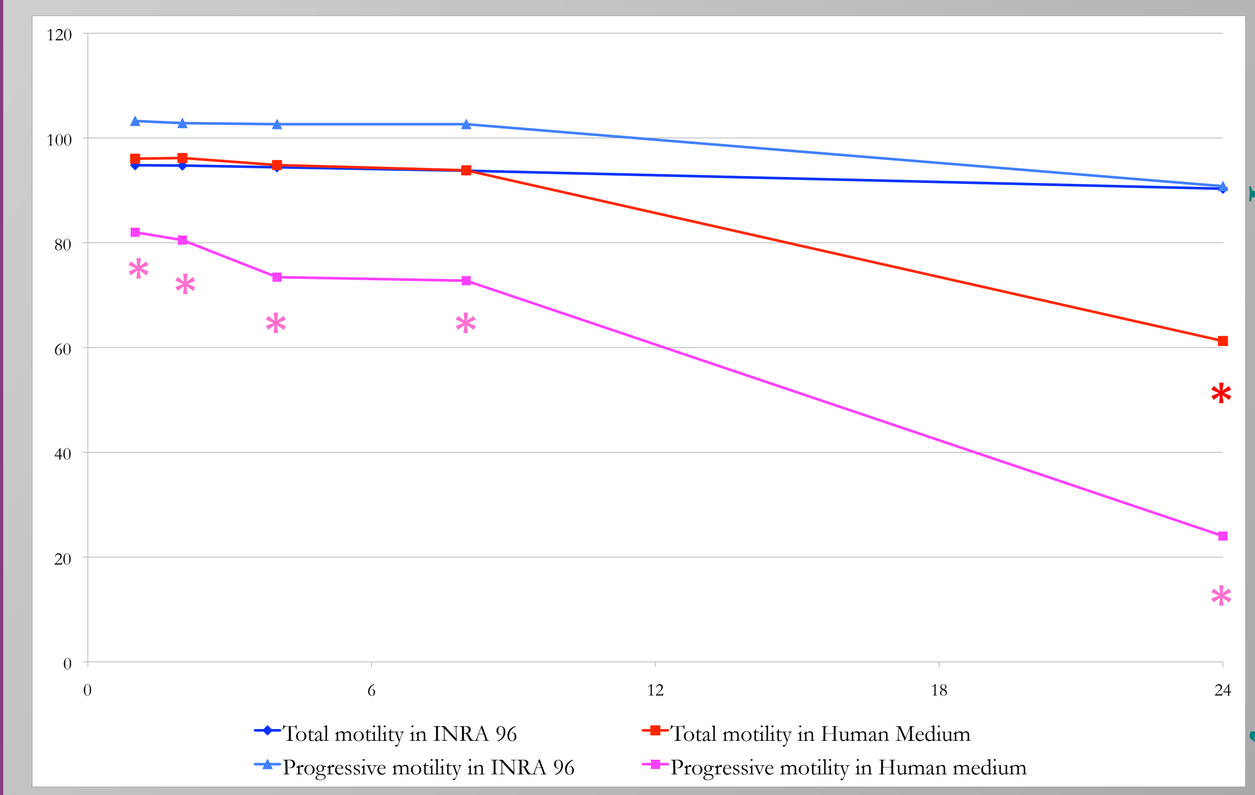
1ml supernatant:
¼ semen ¾ extender

•Storage: 24hours, 20°C, tubes closed
•Motility (CASA): 1, 2, 4, 8, 24 h
•Nuclear Magnetic Resonance: glucose and lactate concentrations: 24h

• **Statistics: kruskall-wallis test for median differences**

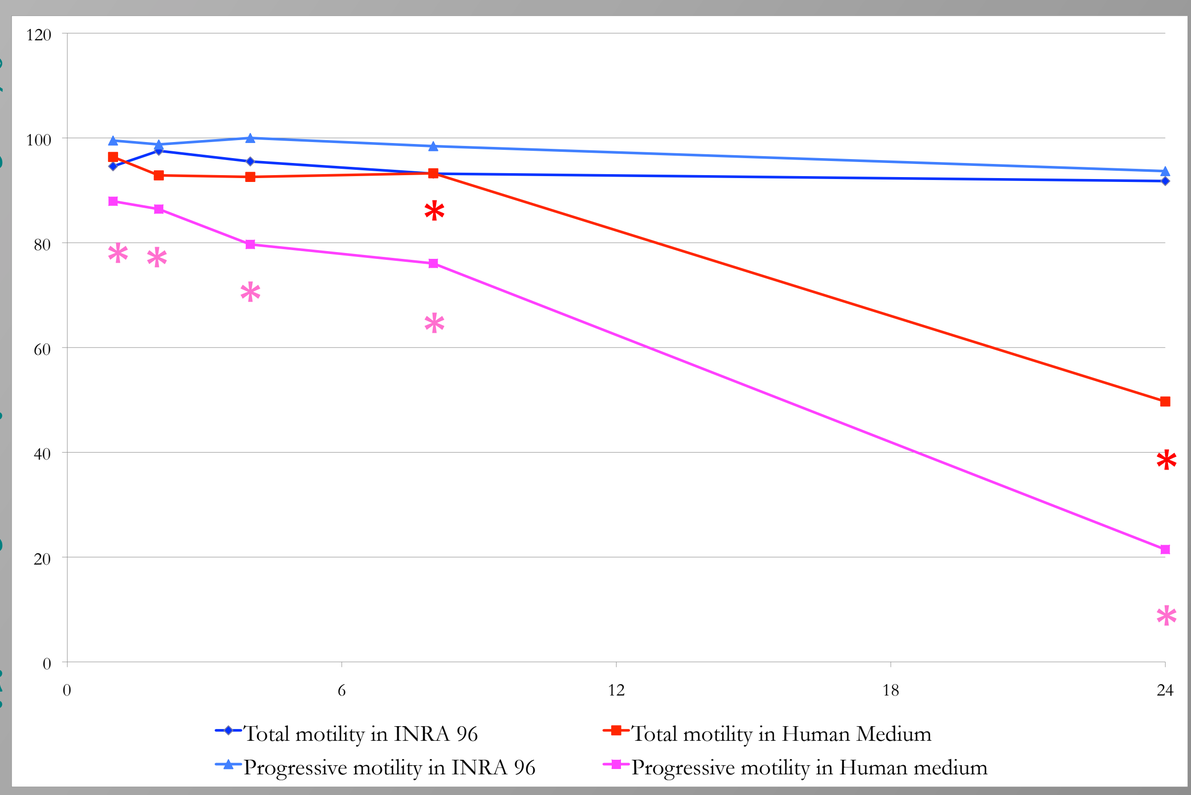
Results

Preservation of motility at 40x10⁶spz/ml



% of preservation of motility

Preservation of motility at 100x10⁶spz/ml



- **Lactate after 24 hours**
  - ↑ in Allgradwash™ when compared to INRA96
- **Glucose after 24 hours**
  - ↓ in Allgradwash™ when compared to INRA96
- **Median glucose concentration in INRA 96:**
  - **17.86mmol in native vs 25.57mmol after 24h of semen preservation**

Conclusions

- **Human extender doesn't support equine semen storage: progressive motility is rapidly lower**
  - ✓Effect on progressive motility rather than on total: Non-progressive motility previously associated with glycolysis
- **Glucose use and lactate production negligible:**
  - ✓No differences between 40 & 100x10⁶spz/ml
- **Glucose increased in INRA96 after 24 hours of storage:**
  - ✓Extracellular cleavage of complexe carbohydrates?