


Quality of cryopreserved sheep semen: comparison of two sperm concentrations



Animal Biotechnology 2018



Insemination station for endangered breeds



Bovine
Swine
Sheep
Goat



Swine and bovine



Mangalitza



Pustertaler Sprinz



Turopolje



Pinzgauer

bovine



Straw-breed

Sheep and goat



Krainer Steinschaf



Pinzgauer Ziege



Waldschaf



Steirische Scheckenziege



Zackelschaf

Background information

- Insemination in sheep is a challenge
 - Anatomical particularities of the cervix
- Natural mating
 - No benefits from artificial insemination
- Laparoscopic insemination
 - Higher costs
 - Time consuming
 - Animal welfare ?
 - Anaesthesia

Background information

- 150 mio/straw
 - Enough for laparoskopische insemination
 - Too low for insemination with precervical placement
- Double concentration:
 - AI with precervical placement of the semen?
- No examinations about quality parameters
 - Different mixing ratio between semen extender and sperms



Material and Method

- Material

- 2 Sperm concentrations

- 300 mio/ml
- 600 mio/ml

- Procedure:

- Dilution

- Cooling (4 °C, 4 hs.)

- Filling in straws

- Prefreezing (10 min, 4 cm over liquid N₂)

- Freezing (- 196 °C, liquid N₂)

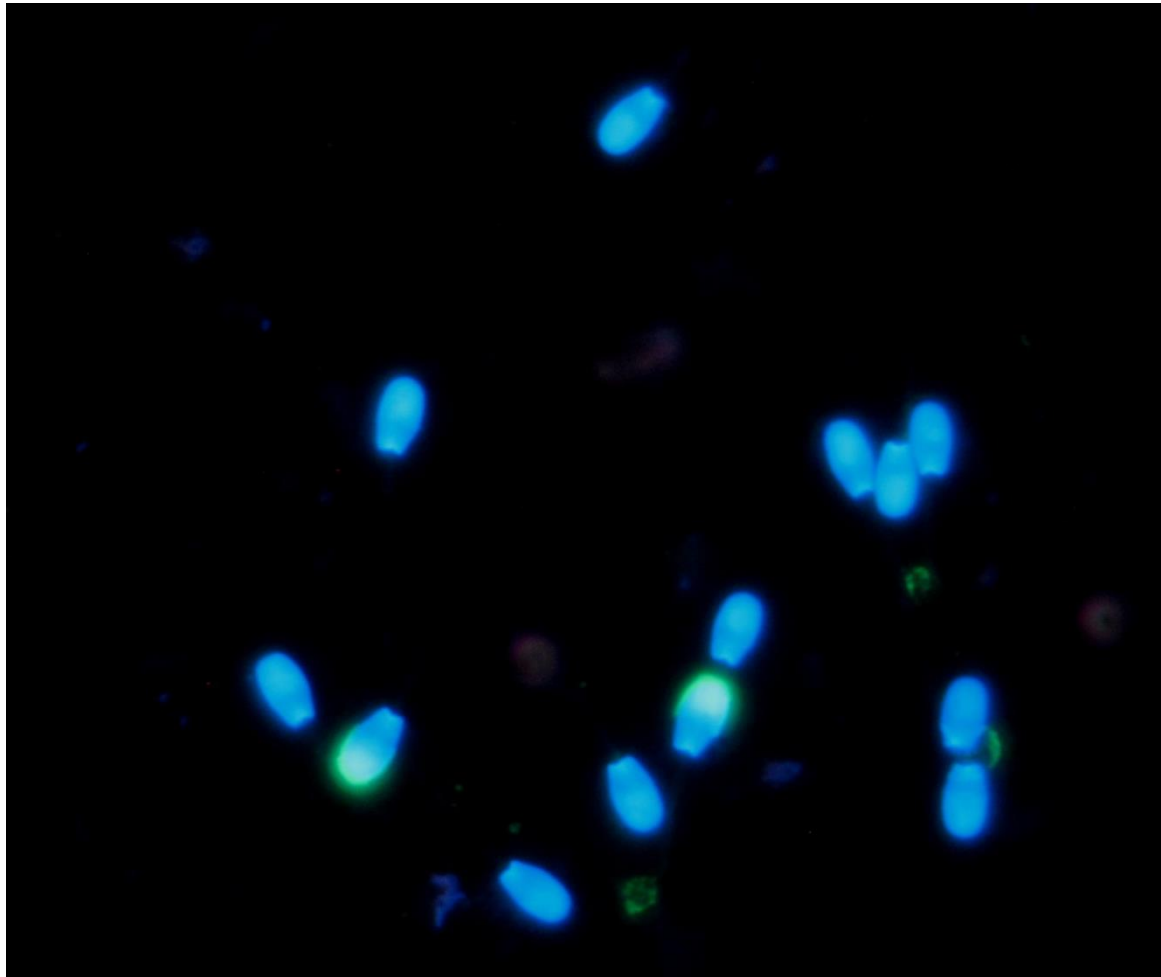
- Thawing (38 °C, 30 sec.)



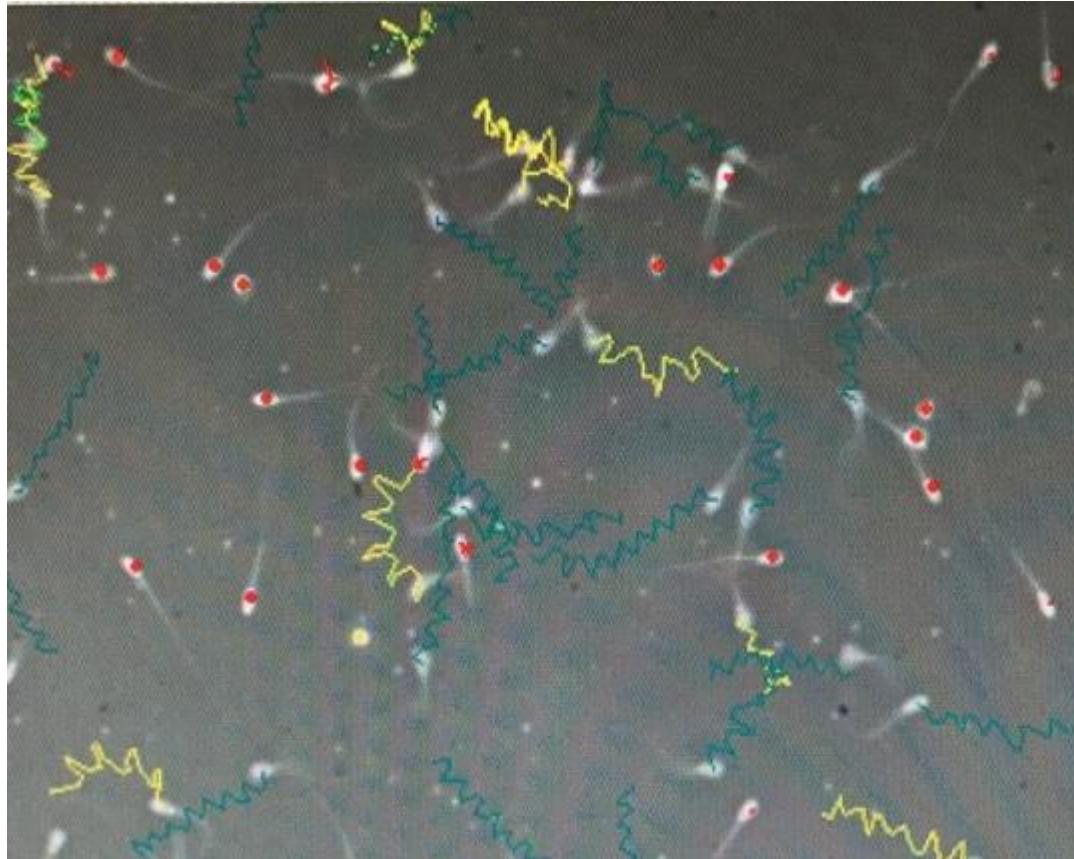
Material and Method

- Fluorescent staining of the acrosoms
- CASA (Computer assisted sperm analyses):
 - Density,
 - motility,
 - progressive movement,
 - viability,
 - patho forms,
 - Broken acrosoms
- Statistical evaluation by using general linear models procedures (IBM SPSS 22)

Fluorescent staining



CASA – Sperm Vision



Results

		300 mio/ml	600 mio/ml	p
CASA (n=20)	Density	479	811	0,002
	Motility	68,9	56,3	0,037
	Progressiv	60,44	47,4	0,041
	Viability	52,9	44,1	0,165
	Patho forms	41,5	46,2	0,218
	Broken acrosoms	33,8	38,6	0,161
Fluor.Microscope (n=56)	Broken acrosoms	34,8	37,8	0,298

Conclusions

- No recommendations at the moment
 - Quality of double concentrated thawed semen is worse
- Further examinations under field conditions
 - pregnancy rates and
 - fertility parameters

Thank you for your attention

