

On-field Electro-ejaculation of wild Prezwalski horses: results and perspectives



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Introduction

- Wild horses: poor assisted reproduction:
 - Poor knowledge of female cyclicity
 - Limited semen availability
- On field electro-ejaculation:
 - Increase of genetic exchange between zoos or safari parks
 - Anaesthesia risks
 - Poor quality of collected semen
- Aim of the study:
 - Describe a safe and effective anaesthesia & electro-ejaculation protocol
 - Describe parameters of semen obtained by this protocol



Material and methods

Animals: 3 wild Prezwalski horses requiring fertility assessment

Anaesthesia:

- Darted with acepromazine, detomidine, butorphanol and etorphine
- Catheter for balanced anaesthesia (Guaiacolate glycerol, ketamine, xylazine)
- Tracheal tube and oxygen

Electro-ejaculation:

- Bladder emptied
- Prostatic massage (2 minutes)
- Electro-ejaculation protocol (see table): Minitube bovine device
- Urine collection at the end
- Semen analysis:**
 - On field: concentration and light microscopy motility evaluation (37°C)
 - Large dilution of semen in INRA96® (1v/5v)
 - In lab within 4 hours: CASA analysis

Electro-ejaculation sequences

	10 stimulations 0.5V	10 stimulations 1.5V	15 stimulations 2.5V	3min rest	
Cycle 1	10 stimulations 0.5V	10 stimulations 1.5V	15 stimulations 2.5V	3min rest	
Cycle 2	10 stimulations 0.5V	10 stimulations 0.5V	15 stimulations 3.5V	3min rest	
Cycle 3	10 stimulations 1.5V	10 stimulations 2.5V	10 stimulations 3.5V	15 stimulations 4.5V	3min rest
Cycle 4	10 stimulations 0.5V	10 stimulations 2.5V	10 stimulations 3.5V	15 stimulations 4.5V	

Results

Anaesthesia & procedures:

- <1 hour with training of the team
- No complications observed (easy wake-up, no pneumonia by aspiration)

Semen collection:

- Higher sperm number collected after cycle 2 & 3
- Low spermatozoa number in urine collected at the end of procedure
- Low motility observed on-field in raw semen (estimation: <20% in all cases)



In lab semen parameters

	Total sperm number (x10 ⁶) collected	Progressive motility (%) of extended semen
Horse 1	4291	56
Horse 2	1515	30
Horse 3	450	25

Conclusions

- Tele-anaesthesia, IV balanced anaesthesia and endotracheal tube + O₂
 - Secure!
- Semen collected:
 - Sufficient number to produce AI dose
 - Low raw semen motility (<>urine contamination?)
 - Large dilution in extender improves motility (shipping & AI program)