

## (Cryo)survival of the fittest, 2nd May 2019

The seminar was arranged jointly by CRU and the Veterinary Faculty's Research School; it was attended by approximately 20 people. After a short introduction describing the objectives of CRU, the first speaker (Dominik Burger) gave a presentation on reproductive strategies in horses. He was able to show some videos about stallion behaviour when free ranging i.e. not influenced by people. Stallions spend much of their time "checking" on their harem and show definite preferences for certain mares. Mares also exhibit mate preference.

He was followed by Manuela Wulf, who talked about the differences between male and female foals in the neonatal phase. There were some unexpected differences between the two sexes which could have a profound effect on survival.

After Manuela's talk there was a change of species, when Heiner Bollwein gave a presentation on the effects of oxidative stress on the function of cryopreserved bovine sperm. Oxidative stress can cause considerable damage to sperm DNA, which carries over to the developing zygote. However, the damage may not be incompatible with further development but may offer possibilities for epigenetic programming.

Heiner was followed by Alexei Santiani, who talked about cryopreservation of epididymal alpaca spermatozoa. Cryopreservation of alpaca semen is complicated by the viscous nature of the seminal plasma, which prevents penetration of cryoprotectants. Therefore, Alexei has been working with epididymal spermatozoa to avoid the problem of the seminal plasma, testing various cryoprotectants, antioxidants etc. Another problem is the low number of spermatozoa available, which limits the number of assays that can be done on each sample.

Lastly, Sourabh Deori presented some of his work on cryopreservation of yak spermatozoa. Yaks are an important livestock species in some parts of India, where few other animals can survive and reproduce. They provide meat, milk and hair for the local population. Sourabh has some interesting results based on laboratory evaluations but would like to test the sperm samples in insemination trials as well.

There were a lot of questions arising from these presentations.

### Programme

- Reproductive Strategies in horses. Dominique Burger, University of Zurich, Switzerland
- Foal sex in the neonatal phase. Manuela Wulf, Brandenburg Stud, Germany
- Effects of oxidative stress on function of cryopreserved bovine sperm. Heiner Bollwein
- Cryopreservation of alpaca semen. Alexei Santiani, University of Lima, Peru
- Cryopreservation of yak semen. Sourabh Deori