Programme

2nd Nordic Embryo Workshop for Cattle Breeding

26 Feb 2020

12:15 - 13:00

Welcome & Lunch

Presentation of participants

13:00 - 13:15

SESSION 1

Opening of Workshop

Lotte Strøbech and Poul Hyttel

13:15 - 13:45

SESSION 1

Keynote lecture: Step by step - Biological and technical factors influencing OPU commercial results.

Carlos Aurelio Suárez Fernández

Carlos Aurelio Suárez Fernández (1); Denise Abel Varela (2); Rubén Francisco Vázquez (2)

1-EMBRYOFIV.
2-XENÉTICA FONTAO S.A.

Transvaginal ultrasound-guided follicular aspiration (OPU) is a versatile technique of choice to retrieve oocytes from high genetic value cows. Its commercial application can be limited by certain factors such as age, breed, nutrition or physiological status of donor. There are also important factors such as frequency and timing of follicular puncture, technician or OPU equipment. One of its main advantages is that a hormonal stimulation prior to OPU is not required, making it a very attractive technology. A good pregnancy result involves obtaining good quality oocytes. Thanks to the improvement of culture systems, today we obtain pregnancy rates higher than 55% what makes this technique the tool of the future to increase the intensity of genetic selection and improve animal production systems.

13:45 - 14:00

SESSION 1

Discussion

All participants

14:00 - 14:30

SESSION 1

Keynote lecture: New challenges in IVP commercial laboratory: Without hormones.

Rubén Francisco Vázquez

Rubén Francisco Vázquez (2); Denise Abel Varela (2); Carlos Aurelio Suárez Fernández (1)

1-EMBRYOFIV.
2-XENÉTICA FONTAO S.A.

Nowadays, the number of IVD embryos produced in the world is twice lower than IVP embryos (Viana, 2018). Despite all the scientific and technological advances that have occurred in recent years, these biotechnologies are still used in small extent. Companies have been looking to improve the existing process to use IVF in a large-scale. Xenética Fontao S.A. is a selection and reproduction animal center located in the northwest of Spain, it has a semen lab, a molecular genetics lab and an IVP laboratory. IVP lab is essential for the development of our company´s genetic program. Genomic selection and an IVP shorten the breeding interval, increasing selection accuracy and reducing the previous cost of progeny testing. Nowadays we produce more than 2000 embryos per year working with prepubertal animals, sexed semen and news biotechnologies such as ICSI or embryo biopsy.

14:30 - 14:45

SESSION 1

Discussion

All participants

14:45 - 15:15

Coffee and cake break

15:15 - 15:45

SESSION 2

Keynote lecture: Embryo Transfer and Associated Assisted Reproductive Techniques in a Commercial Setting

Hanna Grothmann, Masterrind, Germany

Breeding progress in the bovine species is limited by the large generation interval. One attempt to decrease the generation interval is to employ animals as young as possible in commercial breeding programs. Additionally, MOET and OPU/IVP programs have played an important role in the modern cattle breeding industry ever since their implementation.
In Germany, the introduction of the genomic breeding values in 2012 added to the importance of assisted reproductive techniques in the industry. Today, the estimation of the breeding value of an embryo prior to transfer into a recipient animal occurs routinely.
Nevertheless, the success of these breeding instruments is dependent upon – and in some cases limited by - a multitude of factors. These include housing and feeding of donors and recipients, hormone treatment, laboratory protocols, and many more. The identification and ideally elimination of these potential pitfalls is an essential prerequisite to establish a well-working breeding program.

15:45 - 16:00

SESSION 2

Discussion

All participants

16:00 - 16:30

SESSION 2

Keynote presentation: Vitrification vs Slow Freezing - overall results from a new laboratory in the U.K.

Ian Muusha, Tyndale Vets, United Kingdom

Main talking points:
- Very brief look at their laboratory setup and equipment
- The types of changes he brought to the team in order to start achieving successful results
- The differences (and challenges) he faced during his transition from human embryology to bovine embryology and how he bridged these differences between 2 very different professions
- The type of media they currently use for embryo production, as well as the techniques they use for cryopreservation. This will include a very precise but focused talk on the principles of the two main cryopreservation techniques i.e. slow freezing (most vets refer to this as direct transfer) and vitrification. He will also delve into the reasons why one has become vastly superior over the other before lastly presenting our current results.

16:30 - 16:45

SESSION 2

Discussion

All participants

16:45 - 17:00

Presentation of Viking Genetics Denmark

Henri Simonen

17:00 - 18:30

Visit to Halsnæs Bryghus

Networking over beer at this local brewery on the waterfront.

18:30 - 21:30

Dinner

@Hundersted Kro

27 Feb 2020

06:15 - 07:15

Morning swim at Trekanten

07:15 - 08:15

Breakfast

@Hundested Kro

08:15 - 08:45

SESSION 3

Current status of bovine ART research and application, Finland

Jaana Peippo

08:45 - 09:15

SESSION 3

Current status of bovine ART research and application, Sweden

Ylva Sjunnesson and Renée Båge

09:15 - 09:30

SESSION 3

Current status of bovine ART research and application, Denmark: Five years of MOET and IVP

Søren E Madsen

09:30 - 09:45

SESSION 3

Current status of bovine ART research and application, Denmark: IVP and embryonic biopsies in Denmark

Vahid Najafzadeh

09:45 - 10:15

SESSION 3

Current status of bovine ART research and application, Norway

Karolien Desmet and Marja Mikkola

10:15 - 10:30

Coffee break

10:30 - 12:00

SESSION 4

A joint Nordic bovine ART task force

All participants

12:00 - 12:30

SESSION 4

Workshop evaluation and plans for the future

12:30 - 13:15  **Lunch**