



## **Short notes from Nordic Embryo Technology Association (NETA) workshop on Zoom 2021-02-17 - 18**

2021-02-17: Introduction and country presentations, please see separate power point compilation available here until 2021-05-31:

[https://www.slu.se/globalassets/ew/org/centrb/cru/program-mm/2021/NETA\\_2021\\_presentations.pdf](https://www.slu.se/globalassets/ew/org/centrb/cru/program-mm/2021/NETA_2021_presentations.pdf)

The full schedule is available here: <https://www.slu.se/globalassets/ew/org/centrb/cru/program-mm/2021/neta-2021-zoom.pdf>

2021-02-18: The WS was divided into three focus groups depending on participant preference (see notes below). The following persons volunteered as preliminary country representatives in NETA and will work with the constitution draft until the next annual meeting:

- Irma Oskam (Norway, [irma.oskam@nmbu.no](mailto:irma.oskam@nmbu.no))
- Jan Bojsen-Møller Secher (Denmark, [jbsecher@sund.ku.dk](mailto:jbsecher@sund.ku.dk))
- Merle Friederike Fenner (Denmark, [merle.fenner@sund.ku.dk](mailto:merle.fenner@sund.ku.dk))
- Ylva Sjunnesson (Sweden, [ylva.sjunnesson@slu.se](mailto:ylva.sjunnesson@slu.se))
- Jaana Peippo (Finland, [jaana.peippo@luke.fi](mailto:jaana.peippo@luke.fi))

Please contact the country representatives if you have comments on the constitution draft (see below) or suggestions for activities. The next Annual meeting (WS) will be held in Sweden 2022 since we only managed a digital version this year.

## **Notes from the focus groups**

### **Group A: Genetic/epigenetic/molecular analyses of embryos (moderators Denise Laskowski and Ida Hallberg)**

- Discussed specific methods for extraction of RNA and/or DNA, with focus on the issue of the limited amount of material from single embryos or biopsies.
- Extraction of RNA and DNA in parallel is more challenging.
- Discussed ways of evaluating the quality of extracted material, call rate seems the best method so far.
- Enzymatic destruction of the zona before extraction doesn't seem to improve the results or increase the amount of RNA.
- Some groups have sent extracted RNA/DNA for sequencing (NovoGENE) with good results, mostly non-embryo samples (Calf DNA) possible to send to BGA for both extraction and analyses, affordable and good results.
- Discussed how to solve the gap between bioinformatics and biology, decided to discuss further the opportunity of a workshop in this matter.

### **Group B: Improvement of non-invasive scoring methods for oocytes and embryos (main focus on bovines and a little on porcines, moderator Ylva Sjunnesson)**

- All present use similar subjective grading systems (IETS manual, Ian Gordon Cattle embryos or similar).
- Time lapse has been tried by some but it did not work very well when working with larger groups of oocytes/embryos that are also generally darker than humans. Not currently used by anyone (NB it is possible that there are updated versions of Time lapse available now.)
- Freezing and recovery as an approach has been used by some (both recovery all the way to hatching *in vitro* and ET and recovery on day 14 to check elongation).
- Analysis of culture media as an approach: no one has tried this yet and there are no plans in place for this for the future.
- Staining procedures that does not kill the oocyte/embryo: no one are using this right now. Also it might be more invasive than desired.
- Workshop in the workshop: We tried a very short session with showing images of embryos (including a beautiful twin!) and trying to give grades and discuss why we did these judgements. It is always good to "calibrate" one self against others! We think this could be very valuable to try more in the future in NETA, for example like a shorter workshop in the annual meeting where everybody bring their own images for scrutiny.

### **Group C: Embryo transfer and method comparisons (moderator Renée Båge)**

- Technique and biology – cannot get much further, instead:
- Recipient + donor management: feeding, early puberty, good results. Fertility after flushing – not too fat, maybe treat with vaginal progesterone. Cows as recipients, high yield effects synchronisation results. Varying results in recipient herds. Heat detection aids ensure good results.
- Recipient inclusion criteria – CL present, although some are lost not palpable but there with US.
- Speeding up the genetics, improving results=liveborn calf: Fresh embryos instead of frozen, MOET instead of IVP. Ensures pregnancies also from low quality embryos, eg double transfer of low quality embryos, pros and cons with twins.
- Bad result, bad rumors: Support the farmer, find solutions
- Follow up: system to follow up liveborn calf, problems
- Long distances, human resources and geographical availability
- Success rate connected to communication – farmer communication. Instructions written (oral/apps, monthly reports, feedback. Breeding advisors are key persons, important to educate them!
- Activities: Both at meetings and in between, collaborations
- Breeding company collaborations in Europe – no one knows how it will influence embryo activities

## **Constitution: Nordic Embryo Technology Association (NETA)**

Draft 4 (2021-01-11)

### **Formation**

A non-profit association is formed and named “Nordic Embryo Technology Association”. It is from here on referred to as the Association.

### **Objective**

The object of the Association is to facilitate the diffusion and application of knowledge on embryo technologies in all species by creating a forum for the exchange of practical, technical and scientific information at a Nordic level and by organising yearly meetings, encouraging everyone to participate: practitioners, technicians, teachers, scientists, and students.

### **Duration**

The duration of the Association is unlimited.

### **Head office**

The head office location will rotate yearly according to the country organizing the Annual Meeting.

### **Composition, admission and exclusion**

The Association is composed of all individuals with an interest in the field of embryo technology with a base in one of the Nordic countries. The Nordic countries are grouped as follows:

1. Norway,
2. Denmark,
3. Sweden,
4. Finland,
5. Iceland.

Application for membership must be made in writing and personal data handling must be accepted (all personal data will be handled according to the GDPR). The Board (see below) is responsible for acceptance of membership. Membership ceases upon written resignation, or upon exclusion proposed by the Board and passed by a majority vote at a general meeting, where the person concerned must have been invited at least one month before the meeting to have the opportunity to explain their conduct.

## Fund

The funds of the Association consist of annual dues of members and benefactors, receipts by virtue of testamentary disposition, legacies and donations and other revenues. Each member must pay annual dues, the amount of which is decided upon at the Annual Meeting. Initially the funds of the Association is planned to be zero (annual due: zero and no other funds accepted).

## Organisation

The constituent bodies of the Association are:

- The Board of Country Representatives
  - A maximum of two members from each country are selected by voting members in the Annual Meeting. Half of the board is up for election every second year but the same members can be re-elected. Drawing of lots will be used to determine which half of the Board is to be elected first, at the end of the first two years' operation. The Board meets at least once per year.
  - The Board selects a President, a Vice President, a Treasurer and a Secretary of the Association from amongst themselves. The Association is represented by its Board. The President together with the Secretary or the Treasurer, or the Secretary together with the Treasurer, have the right to represent the Association.
  - The Association is financially committed by the signature of the President or of the Treasurer of the Association. In case of their being unavailable, this may be delegated to another member of the Board.
- The members present at the Annual Meeting whose subscription have been paid.
- The meeting organisers
  - The organisers of the Annual Meeting (rotates between the Nordic countries). The meeting organisers are appointed by the country representatives.

## The Annual Meeting

The Annual Meeting will be organised as an interactive workshop by one of the Nordic countries in turn. The basic rotation schedule over five years will be as follows:

1. Norway,
2. Denmark,
3. Sweden,
4. Finland,
5. Iceland.

The schedule can be changed as required (the Board of country representatives can decide on changes). For example a country could be skipped in the rotation if there is no possibility to organise the meeting in this country. Attendance at the Annual Meeting is open to all with an interest in the field of embryo technology.

The Annual meeting should ideally be at least from lunchtime one day until lunchtime the next day, allowing for extra activities such as laboratory visits, to take place during the first morning or the second afternoon, as required. It should include reports from the Nordic countries, including clinical work and current research, as well as updates on interesting subjects directly connected to embryo technology. There should be enough time for networking and discussions. Apart from including these aforementioned parts and the Association matters below, the organising country is free to decide the program and focus of the Annual Meeting.

A part of the Annual Meeting will focus on the Association:

1. The report of the Association activities since last meetings.
2. Election of Board members
3. Approval of the accounts for the previous year (from the last Annual Meeting).
4. Approval of membership rates.
5. Exclusion of members if needed.
6. Adoption of the Association budget for the coming year.
7. And any other subject relating to the purpose and running of the Association.

Only members are allowed to vote; one member may act as proxy for up to five non- present members during voting. A simple majority of votes is needed to carry a decision.

### **Extraordinary Meeting**

The modification of the above articles of the Association or the dissolution of the Association may only take place at an Extraordinary Meeting specifically called to that effect. The Extraordinary Meeting must comprise at least one quarter of all active members present at the last Annual Meeting and at least half of the Board. If a quorum is not reached for the Extraordinary Meeting at the first call, the Meeting will be called again following the same procedure, fifteen days later, and may validly deliberate, whatever the number of members present.

Any proposal to modify the Articles or to dissolve the Association must be notified in writing to all members at least two months before the date of the Extraordinary Meeting.

In the event of dissolution of the Association, decisions as to how the funds of the Association are to be used, once all obligations have been met in conformity with applicable law, will be taken at this last Extraordinary Meeting.