Bull Fertility Conference - Theory to Practice
The Dome, Castlecourt Hotel, Westport, Ireland
27-30 May 2018

Programme

Sunday 27th May 2018

13:30  Registration  (13:30-15:00 and 17:30-18:30)

15:00 - 17:30  Pre-conference Dairy Farm tour.  Meet in foyer of Castlecourt hotel
Coach leaves at 14:30
Farm: Padraig, Breege and Brian Joyce

18:30  Session: Setting the Scene
Chairperson: Michael Diskin, Teagasc, Ireland

19:00  279  Historical and futuristic developments in semen technology
Pat Lonergan, University College Dublin, Ireland

20:00  Conference Reception – The Dome, Castlecourt Hotel

Day 1 Monday  28th May 2018

08:00  Registration

Session: Male Reproductive Physiology: Chair - Sean Fair, Ireland.

08:30  280  Ontology and endocrinology of the male reproductive system of bulls from foetus to maturity
Mike McGowan, The University of Queensland, Australia

09:10  281  Spermatogenesis in the bull
Christophe Staub, INRA, France

09:50  282  The effect of nutrition on timing of pubertal onset and subsequent fertility in the bull
David Kenny, Teagasc, Ireland

10:30  Coffee/Tea
### Session: Bull Fertility: Chair - Joe Dalton, USA

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter/Location</th>
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<tbody>
<tr>
<td>11:00</td>
<td>Using artificial insemination vs natural service in beef herds</td>
<td>Pietro Baruselli, University of Sao Paulo, Brazil</td>
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<td>11:40</td>
<td>Understanding the causes of variation in reproductive wastage among bulls</td>
<td>Sean Fair, University of Limerick, Ireland</td>
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<td>12:20</td>
<td>Integrating a semen quality control program and sire fertility at a large artificial insemination organization</td>
<td>Matt Utt, Select Sires Inc, USA</td>
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<td>13:00</td>
<td>Lunch – Orchard Restaurant</td>
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### Session: Optimising Semen Procedures and Sexed Semen: Chair - Ger Ryan, Ireland

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<tr>
<td>14:00</td>
<td>Semen handling, time of insemination and insemination technique in cattle</td>
<td>Michael Diskin, Teagasc, Ireland</td>
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<td>14:40</td>
<td>Semen Sexing: current state of the art with emphasis on bovine species</td>
<td>Vish Vishwanath, Sexing Technologies, USA</td>
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<td>15:20</td>
<td>Application and benefits of sexed semen in dairy and beef herds</td>
<td>Stephen Butler, Teagasc, Ireland</td>
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<td>16:00</td>
<td>Tea/Coffee and Poster Session</td>
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### Session: Industry Session: Value creation/long-term genetic progress: Chair - Bernard Eivers, Ireland

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<tr>
<td>17:00</td>
<td>Value creation/long-term genetic progress</td>
<td>Olivier Hiers, ABS Global Inc</td>
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<td>17:20</td>
<td>Analysis of bull sperm with a CASA system</td>
<td>Cristina Roda Vidal, Microptic</td>
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<td>17:25</td>
<td>IMV’s response to protecting value creation and genetic progress</td>
<td>Agnès Camus, Maxime Sergent, IMV Technologies</td>
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<td>17:30</td>
<td>Time to vaccinate</td>
<td>Cara Sheridan, MSD Animal Health</td>
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<td>17:35</td>
<td>Evolution of the Pulsator as it relates to animal welfare.</td>
<td>Bob Green, Lane Manufacturing / Merlin Vet Services</td>
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<td>17:40</td>
<td>Discussion</td>
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<td>18:00</td>
<td>End of Day 1</td>
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<td>20:00</td>
<td>Conference Dinner – Castlecourt Hotel</td>
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Day 2 Tuesday 29th May 2018

08:00  Registration

**Session: Sperm and Seminal Plasma: Chair - Pat Lonergan, Ireland**

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<thead>
<tr>
<th>Time</th>
<th>Paper</th>
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| 08:30 | 289   | The potential of seminal fluid mediated paternal-maternal communication to optimise pregnancy success  
*John Bromfield, University of Florida, USA*
| 09:00 | 290   | The epic journey of sperm through the female reproductive tract  
*David Miller, University of Illinois, USA*
| 09:50 | 291   | Sperm-oocyte interactions and their implications for fertility - with emphasis on the ubiquitin-proteasome system.  
*Peter Sutovsky, University of Missouri, USA*

10:30  Coffee/Tea

**Session: Thermoregulation and Behaviour: Chair - Colin Penny, UK**

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| 11:00 | 292   | Testicular vascular cone development and its association with scrotal thermoregulation, semen production in bulls  
*John Kastelic, Department of Production Animal Health, University of Calgary, Canada*
| 11:40 | 293   | Principles of maximising bull semen production at genetic centres  
*John Schenk, Colorado, USA*
| 12:20 | 333   | Effect of altering plane of nutrition during the first and second six months of life on *in-vitro* fertilizing ability and DNA fragmentation in mature Holstein-Friesian bulls  
*C J Byrne, B Fernandez-Fuertes, S Fair, C Maicas, P Lonergan, D A Kenny*

12:30  Lunch – Orchard Restaurant

**Session: Pathophysiology of Bull Subfertility: Chair - Donal Murphy, Ireland**

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<th>Time</th>
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| 13:30 | 294   | Abnormalities of the bull: occurrence, diagnosis and treatment of abnormalities of the bull including structural soundness  
*Dwight Wolfe, Auburn University, USA*
| 14:10 | 295   | The use of bull breeding soundness evaluation to identify sub fertile and infertile bulls  
*Al Barth, University of Saskatchewan, Canada*
| 14:50 | 296   | Risks of disease transmission through semen in cattle  
*Daniel Givens, Auburn University, USA*

15:30  Tea/Coffee

**Session: Novel Technologies: Chair - Sinead Waters, Ireland**

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| 16:00 | 297   | Genomics of bull fertility  
*Jerry Taylor, University of Missouri, USA*
| 16:40 | 300   | Bull sperm sncRNAs: A new source for potential fertility biomarkers?  
*E Sellem, S Marthey, H Kiefer, C Le Danvic, A Allais-Bonnet, L Jouneau, A Rau, H Jammes, L Schibler*
A descriptive analysis of bull sperm methylome using reduced representation bisulphite sequencing (RRBS)

The relation between the functional status and miRNA profile of cryopreserved bovine semen
E Malama, S Bauersachs, M Siuda, F Janett, H Bollwein

The use of collar accelerometers to investigate the activity of dairy natural service bulls
R Waite, C Dwyer, D Beggs, P Mansell, M Stevenson, J Hills, M Pyman

Effects of copper and zinc supplementation on standard and novel measures of fertility in peripubertal beef bulls
T Geary, R Waterman, M Van Emon, A Zezeski, J Heldt, J Spears

Objective analysis of frozen bovine semen using CASA and flow cytometry
M Spilman, K Burton, J Statham

Day 3 Wednesday  30th May 2018

08:00 Registration

Session: Bull Production, Selection and Evaluation: Chairperson; Al Barth, Canada

08:30 Overview of pedigree bull production – is it conducive to good fertility?
Doreen Corridan, Munster Cattle Breeding Group, Ireland

09:00 What goes wrong with bulls in AI
Bernard Eivers, National Cattle Breeding Centre, Ireland

09:30 Identifying problem bulls at farm level
Donal Murphy, XLVets, Ireland.

10:00 Tea/Coffee

Wet Lab: Breeding Soundness and Semen Evaluation
(Balla Mart 20 minutes from Westport on Castlebar -Claremorris Road)

Facilitator for morning session: Colin Penny, UK

11:00 Physical examination of bulls. Feet, musculoskeletal system, eyes, teeth, heart and lungs, testicles, accessory sex glands, and penis. Ultrasound assessment of the testes.
Doreen Corridan and Michael McGowan

11:30 Semen collection from bulls
Al Barth, Robert Anderson and Donal Lynch
12:15    Gross motility, progressive motility, live-dead counts  
*Donal Murphy and Colin Penny*

12:35    Using a computerised assisted sperm analysis for sperm assessment  
*Maxime Sergent, IMV France*

12:45    Lunch

Facilitator for afternoon session: John Kastelic, Canada

13:45    Sperm Morphology Workshop; Recognition, aetiology, prognosis  
*Al Barth and Viv Perry*

16:15    Troubleshooting forum - the bull that won't give a sample  
*Al Barth, Rob Anderson, Donal Murphy, Colin Penny, Doreen Corridan and Michael McGowan*

16:45    Bull Surgery:  
  Bull Epididymectomy  -  *Eoin Ryan*  
  Bull Vasectomy       -  *Donal Lynch*  
  Pudendal Nerve Block -  *Eoin Ryan*

18:00    Finish

**Monday 28th May 2018**  
16:00 – 17:00 Poster Viewing – authors in attendance

305  Natural service bulls in Australian pasture-based dairy herds: management practices, breeding soundness evaluations, and risk factors associated with pre- and post-mating breeding soundness  
*A Hancock, P Younis, D Beggs, P Mansell, M Pyman*

306  The genetic background of three fertility disorders in Nordic red cattle breeds  
*M Andersson, H Venhoranta, T Iso-Touru, K Flisikowski, C Wurmser, H Pausch*

309  Overview of bull fertility in traditional systems of beef production in Southern Spain  
*J M Sánchez, L M Rosales, L Quevedo, C C Perez-Marín*

310  Relationship between scrotal circumference and body weight in pasture raised Jersey and Holstein bulls  
*R Waite, C Dwyer, D Beggs, P Mansell, M Stevenson, M Pyman*

311  Predicting semen characteristics in Holstein and Jersey natural service sires using classification and regression tree analysis.  
*R Waite, C Dwyer, D Beggs, P Mansell, M Stevenson, M Pyman*

312  Relationship between the echotexture of testicular parenchyma and the quality of spermatogenesis in bulls  
*A Echegaray, S Aventín, I Muñoz, S Marcantonio, N Escartín, G Gnemmi*
Effects of sperm selection by discontinuous Percoll® gradient with reduced volume and centrifugation force on sperm oxidative status of thawed bull semen
L de Cássia Bicudo, A F P Siqueira, L S Castro, V S C Pinto, C M Mendes, J D Losano, D de Souza R Angrimani, I J Fernández, M Nichi, J A Visintin, M E O A Assumpção

Non-infectious progressive proximal post-testicular obstruction (PPPTO) in two half-sibling AI bulls - work in progress
S Björkman, T Iso-Touru, O Peltoniemi, M Andersson

The effect of natural heat stress on bull semen quality and subsequent embryo development
N Llamas Luceño, D Angrimani, L Bicudo, K Demeyere, B Leemans, E Meyer, A Van Soom

Polyunsaturated fatty acids influence offspring sex ratio in cows

Droplet digital PCR provides robust, reproducible quantitation of sex skewed bovine semen
N Cray, M Wagner, J Hauer, E Roti Roti

Interest in the study of the echotexture of the testicular parenchyma to evaluate the maturity of young bulls
G Gnemmi, C Maraboli, N Escartín, I Muñoz, S Marcantonio, A Echegaray

Advances in the proteome of electroejaculated seminal plasma from tropical-adapted bulls
Satake, H Skovsgaard Pedersen, M McGowan, G Brandt Boe-Hansen

Effect of season of collection in cryopreserved semen from the Spanish native cattle breed “Asturiana de la Montaña”
C Hidalgo, J N Caamaño, C Fueyo, C Tamargo, A Salman, Á Fernández, M J Merino, M Carbajo, F Martínez-Pastor

Artificial insemination using two different AI-sheaths for training of AI in the cow in veterinary medicine
J Parlevliet

Interaction of Bovine Sperm with Cervical Mucin is Sialic Acid Dependent
S Gedair, H Al Mhanna, M Gallagher, S Carrington, C Reid

Identification of seminal parameters predictive of conception rates in Angus and Nelore bulls used in TAI
É Nogueira, W B Rodrigues, C Sanches Silva, E V Costa e Silva, J R Potiens, J C Borges Silva, P Sutovsky

Relationships between the content of seminal plasma proteins and bull fertility
J M Morrell, S Resjö, J Walfors, T Hallap, F Levander, E Andreasson, D-J de Koning, P Humblot

Seminal plasma of AI-bulls stimulates cytokine production by bovine endometrial epithelial cells in culture in a fertility-dependent manner
T Nongbua, Y Guo, P Humblot, M Rubér, H Rodriguez-Martinez, T Ntallaris, J M Morrell

327 Is there value in doing Bull Breeding Soundness Evaluation in a first-opinion veterinary practice? 
M Tomlinson, P Wood, A Macrae, M Mihm-Carmichael

328 Characterization of bull fertility through multicolour flow cytometric analysis of cryopreserved sperm 
E Malama, K Bucher, M Siuda, F Janett, H Bollwein

329 Sperm motility, semen production efficiency and field fertility in different aged Norwegian Red bulls 
A Khezri, B Narud, J Mbuma, F D Myromslien, E Kommisrud

330 Is genomic selection challenging the production? 
K Kupisiewicz, S Borchersen

331 Sperm DNA fragmentation and kinetics of development of bovine embryos produced in vitro using bulls of different field fertility 
C Maicas, C Passaro, C J Byrne, S T Butler, P Lonergan

332 Nuclear protein contents – An epigenetic marking of sperm cells 
C Le Danvic, F Bray, E Sellem, H Kiefer, H James, C Rolando, L Schibler

334 Progesterone induces the release of bovine sperm from oviductal epithelial cells 
J Romero-Aguirregomezcorta, S Cronin, S Fair

335 Variation in the field fertility of dairy bulls used in AI 
E M Donnellan, M M Kelleher, S Fair