

Fertility in Dairy Cows

bridging the gaps

Thursday 30 August

- 09:00 Welcome and opening remarks - *Dr Melissa Royal, University of Liverpool, UK*
- 09:10 Reproductive challenges facing today's dairy industry
Mr Mike Christie¹, Mr James Allcock¹ and Dr Melissa Royal²
¹Lambert, Leonard and May, Farm Animal Veterinary Surgeons, ²University of Liverpool, UK
- 09:40 SESSION 1:** (*Session supported by Genus ABS*)
Pre-Disposing Factors for Fertility (*Can we give our cows a better start?*)
Chair - Geert Opsomer
- 09:45 The Concept of developmental programming of reproduction in farm animals
Dr David Gardner, Richard Lea and Dr Kevin Sinclair, University Nottingham, UK
- 10:20 Factors influencing heifer survival and fertility on commercial dairy farms
Prof D Claire Wathes, Ms Jessica Bricknall, Dr Nicola Bourne, Dr Angelina Swali and Dr Zhangrui Chang, Royal Veterinary College, UK
- 10:45 Why is it getting more difficult to successfully artificially inseminate cows?
Prof Hilary Dobson, Dr Sue Walker, Mr Michael Morris, Mrs Jean Routly and Dr Robert Smith, University of Liverpool, UK
- 11:20 Coffee/tea
- 11:40 Metabolic changes in high yielding dairy cows and the consequences on oocyte and embryo quality
Dr Jo Leroy¹, Prof Geert Opsomer², Dr Aart de Kruif², Dr Ann van Soom² and Dr Peter Bols¹,
¹University of Antwerp, ²Faculty of Vet Med, Ghent University, Belgium
- 12:05 Effects of progesterone on embryo survival
Dr Dermot Morris and Dr Michael Diskin, Teagasc, Athenry, Ireland
- 12:35 Effect of Escherichia coli infection of the bovine uterus from the whole animal to cell.
Dr Erin Williams¹, Dr Shan Herath¹, Prof Gary England², Prof Hilary Dobson³, Dr Clare Bryant⁴ and Prof Martin Sheldon¹, ¹Royal Veterinary College, London, ²University of Nottingham, ³University of Liverpool, ⁴University of Cambridge
- 13:00 Lunch
- 14:00 SESSION 2:**
Free Communications
Chairs - Robert Smith and Michael Diskin
- 14:00 Progesterone profiles and embryo development in beef heifers with elevated progesterone concentrations
F Carter, N Forde, P Duffy, M Wade, T Fair, M A Crowe, A C O Evans, J F Roche and P Lonergan
- 14:10 Milk progesterone as a genetic and management tool to improve fertility in dairy cows
K-J Petersson, E Strandberg, H Gustafsson, M D Royal and B Berglund

- 14:20 Does exposure to oestrous vaginal discharge and urine from cows and bulls affect the heart rate in heifers?
K Nordéus, R Båge, H Gustafsson, F Hultén, L Söderquist
- 14:30 The effect of dietary protein content on the expression and detection of oestrus in high yielding dairy cows
R A Law, F J Young, D C Patterson and C S Mayne
- 14:40 Voluntary waiting period – do dairy farmers make an active choice?
E Löf, U Emanuelson and H Gustafsson
- 14:50 Estimation of genetic variation in embryo quality: Is there potential to genetically select cattle with the inherent ability to produce high quality embryos?
C Hayhurst, M Firth, M.F. Christie and M.D. Royal
- 15:00 Tea/coffee and Poster viewing
- 15:30 Comparison of ovarian follicles at follicle wave emergence between heifers with high versus low numbers of follicles
A E Zielak, F Ward, N Forde, F Mossa, P Lonergan, G W Smith, J J Ireland and A C O Evans
- 15:40 Controlling age and size of the ovulatory follicle in lactating dairy cows
N M Bello and J R Pursley
- 15:50 Lameness, progesterone, oestradiol and LH profiles and ovarian follicular dynamics in dairy cows
M J Morris, K Kaneko, S L Walker, J E Routly, R F Smith and H Dobson
- 16:00 A survey on fertility in the Holstein populations of the world
A C Sørensen, T Lawlor and F Ruiz
- 16:10 Risk factors for perinatal calf mortality in the Irish national Holstein-Friesian dairy cow population
J F Mee, D P Berry and A R Cromie
- 16:20 Field investigation of perinatal mortality in Friesian cattle associated with myocardial degeneration and necrosis.
R D Murray, A J Williams and I M Sheldon
- 16:30 Effects of CLA supplementation on milk production and reproductive performance of dairy cows
S T Butler and M J de Veth
- 16:40 End of session
- 16:45 WORKSHOP and Coffee/Tea:** (*workshop supported by BASF*)
Conjugated Linoleic Acids - its potential as management tool in dairy nutrition
Chair: Claire Wathes
- 16:50 Conjugated linoleic acids and the dairy cow
Dr Adam L Lock¹ and Prof Dale E Bauman^{2,1}University of Vermont, ²Cornell University, USA
- 17:05 Conjugated linoleic acids and reproductive performance of dairy cows
Dr Stephen T Butler, Teagasc, Ireland
- 17:20 Discussion
- 18:00 End of Session
- 19:15 Reception followed by Conference Dinner and Ceilidh “Two Left Feet”
(Reception by Genesis Faraday)

Friday 31 August

08:45 SESSION 3: (session supported by BASF)

New Opportunities in Fertility Management

Chair - Lucy Andrews

08:50 Where did she come from? Where is she going? – The potential of on-farm fertility profiles
Dr Nic Friggens and Dr Peter L Løvendahl, Aarhus University, Denmark

09:20 Can dietary fatty acid supplementation aid reproduction? Challenges and opportunities
Dr Adam Lock¹, Prof Ron Butler², Dr George Mann³ and Dr Charlie Staples⁴
¹University of Vermont, ²Cornell University, USA, ³University of Nottingham, UK, ⁴University of Florida, USA

09:55 Why this continued interest in crossbreeding? Prospects for improving dairy reproduction and biology
Prof Jack McAllister¹, Prof William Silvia¹, Prof Bennet Cassell², Dr Karen Getzewich² and Dr Ray Nebel³, ¹University of Kentucky, ²Virginia Polytechnic and State University, ³Select Sires Inc, USA

10:30 Heat detection - myths, magic and emerging science
Mr Chris Watson¹ and Dr Dick Esslemont², ¹Wood Veterinary Group, ²Agric Consultant, UK

11:00 Coffee/tea

11:25 The other half of the herd: What's new in sperm science?
Mr Stuart Revell¹ and Prof Bill Holt², ¹Genus ABS, ²Institute of Zoology, London, UK

11:55 Body condition score and fertility - more than just a feeling
Dr Donagh Berry¹, Dr John Roche² and Dr Mike Coffey³, ¹Teagasc, Ireland, ²University of Tasmania, Australia, ³SAC, UK

12:25 Integration of physiological mechanisms that influence fertility in dairy cows
Dr Phil Garnsworthy, Dr Kevin Sinclair and Prof Bob Webb, University of Nottingham, UK

13:00 Lunch

14:00 SESSION 4: (session supported by Holstein UK and CIS)

Better Indicators of Reproductive Ability

(are we collecting the right data and are we using it properly?)

Chair - Mike Coffey

14:05 Fact and fiction of Kiwi cow fertility: The New Zealand approach to breeding more fertile cows
Dr Jennie Pryce¹, Dr Lorna McNaughton¹ and Dr Chris Burke² ¹Livestock Improvement Corporation, ²Dexcel Ltd, New Zealand

14:35 Juvenile predictors of fertility
Dr Catherine Hayhurst¹, Prof Tony Flint², Dr Peter Lovendahl³, Dr John Woolliams⁴, and Dr Melissa Royal¹, ¹University of Liverpool, ²University of Nottingham, UK, ³University of Aarhus, Denmark, ⁴Roslin Institute, UK

15:00 Extended lactation: could it work for UK dairy farmers?
Prof Chris Knight, University of Glasgow

15:30 Tea

- 16:00 Expression profiles of genes regulating dairy cow fertility: recent findings, ongoing activities and future possibilities
Dr Bonne Beerda and Dr Roel F Veerkamp, University of Wageningen, The Netherlands
- 16.30 Are we making the most of current indicators? Experience from National Recording Schemes
Dr Brian Wickham and Dr Andrew Cromie, Dr Francis Kearney and Dr Ross Evans, Irish Cattle Breeders Federation, Ireland
- 16:55 Closing Summary: Have we progressed over the last 10 years
Dr Mark Crowe, University College, Dublin
- 17:10 Close of Meeting

Posters

- 1 The effect of changing dietary amino acid composition on plasma metabolite and hormone concentrations and on oocyte quality in Holstein heifers
J A Rooke, R G Watt, A Ainslie, F M Alink, T G McEvoy, K D Sinclair, P C Garnsworthy and R Webb
- 2 Mastitis induction of delayed ovulation and its relation to follicular functions and luteinizing hormone concentrations in lactating cows
D Wolfenson, Y Lavon and G Leitner
- 3 Distribution of follicle numbers in dairy cows aged from 2 to 11 years
F Mossa, S Butler, P Duffy, F Jimenez-Krassel, J Folger, G W Smith, P Lonergan, J J Ireland and A C O Evans
- 4 *Arcanobacterium pyogenes* pyolysin stimulates bovine endometrial cell prostaglandin secretion
A N Miller, S Herath, C E Bryant, B H Jost, S J Billington & I M Sheldon
- 5 Effect of progesterone supplementation post conception on pregnancy rate in cattle
M E Beltman, P Lonergan, J F Roche and M A Crowe
- 6 Adult dairy cow performance is influenced by her maternal intrauterine environment during development
D P Berry, P Lonergan, S T Butler, A R Cromie, F Mossa, T Fair and A C O Evans
- 7 Effects of dry period duration and dietary energy density on transition period metabolic status and postpartum ovarian function in dairy cows
M de Feu, A C O Evans, P Lonergan and S T Butler
- 8 The effect of crossbreeding on reproduction parameters and milk production of Iranian native cattle
Sh Safari Monjeghtapeh, M M Moeini and E Nooriyan
- 9 The role of zearalenone and β -carotene in heat expression
G M Jones and K G Brewer
- 10 Estimation of genetic variation in embryo quality: Is there potential to genetically select cattle with the inherent ability to produce high quality embryos?
C Hayhurst, M Firth, M F Christie and M D Royal