

Table of Contents

Session I. Efficiency from Cow to Farm

How High Feed Efficiency Reduces the Environmental Impact of the Dairy <i>Frank Mitloehner</i>	5
Feeding and Breeding For a More Efficient Cow <i>Mike VandeHaar</i>	17
Can Genomics Be Used To Improve Feed Efficiency? <i>Diane M. Spurlock</i>	33
Strategies to Improve Economic Efficiency of the Dairy <i>Victor E. Cabrera</i>	45

Session II. Dairy Herd Health

Biosecurity in the Dairy Herd <i>Dick Sibley</i>	59
Lameness, Hoof and Leg Issues in Dairy Cows <i>Ernest Hovingh</i>	77
Understanding the Sources, Transmission Routes, and Prognoses for Mastitis Pathogens <i>Ruth Zadoks</i>	91
How to Decrease the Use of Antibiotics in Udder Health Management <i>Jean-Philippe Roy</i>	103

Session III. The Pre-Weaned Calf

Cow Factors That Influence Colostrum Quality <i>Fiona Maunsell</i>	113
Effect of Maternal Nutrition on Calf Health and Growth <i>Jon Schoonmaker</i>	125
Colostrum Management and Factors Related to Poor Calf Immunity <i>Lorraine Doepel</i>	137
Effective Forage and Starter Feeding Strategies for Pre-weaned Calves <i>Alex Bach</i>	153

Session IV. Nutrition to Optimize Performance and Economic Returns

Reducing Feed Cost while Optimizing Productivity <i>Barry Robinson</i>	167
Reducing Feed Cost while Optimizing Productivity <i>Alex Bach</i>	177
Silage Inoculants – Are They Worth The Money? <i>Tim McAllister</i>	193
Reducing Phosphorus Levels in Dairy Cow Diets <i>Written by Conrad Ferris - Presented by Joe Harrison</i>	209

Session V. Breeding and Reproduction

Crossbreeding in Dairy Cattle: Pros and Cons <i>Written by Conrad Ferris - Presented by Frank Buckley</i>	223
Genetic Selection of Cattle for Improved Immunity and Health <i>Bonnie Mallard</i>	247
Reproductive Management with Limited Hormonal Intervention <i>Jeff Stevenson</i>	259
Strategic Interventions for Reproductive Management <i>Stephen LeBlanc</i>	275

Session VI. The People Side of Dairying

Worker Training and Education to Improve Cattle Welfare <i>Franklyn Garry</i>	293
Enhancing Employee Supervision Skills <i>Chuck Schwartau</i>	301
Using Standard Operating Procedures to Improve Employee and Cow Productivity <i>Fiona Maunsell</i>	309
An Advisory Team Approach to Your Farm Management <i>Lisa Holden</i>	319

Session VII. Disease Issues and Management

Vaccinating Dry Cows and Calves: With What, When, and Is It Effective at Protecting the Calf? <i>Amelia Woolums</i>	329
Why Cows Die on Dairies <i>Franklyn Garry</i>	339
High Risk Cows in High Risk Places <i>Dick Sibley</i>	349
Buyer Beware – Emerging Diseases Coming to Canadian Dairy Farms <i>Dave Kelton</i>	361

Student Presentation Abstracts

- Effects of Pair Housing on Feeding Behaviour and Weight Gain in Dairy Calves
J. H. C. Costa, R. K. Meagher, M. A. G. von Keyserlingk and D. M. Weary 369
- Prevalence of Digital Dermatitis in Alberta Dairy Cattle Using Intensive Copper Sulphate Footbath Protocol
X.S. Gao and M. Oba Casey E. Jacobs, Karin Orsel, Steve Mason, Laura Solano, Herman W. Barkema 370
- Age and Dose Dependent Susceptibility to *Mycobacterium Avium* Subsp. *Paratuberculosis* Infection in Dairy Cattle
Rienske A.R. Mortier, Herman W. Barkema, Karin Orsel, Janet M. Bystrom, Oscar Illanes, Robert Wolf, Maria E. Negrón, Gordon Atkins, Jeroen De Buck 371
- Two Feedings of Colostrum within 6 Hours of Birth Improves Serum Immunoglobulin G Levels in Dairy Calves Up To 28 Days of Age
Heather W. Neave, Zoe Cocker, and Douglas M. Veira 372

Poster Abstracts

- How Does Porcine Luteinizing Hormone Increase Pregnancy Rates in Dairy Cows?
A. Behrouzi, M.G. Colazo, D.J. Ambrose 375
- Twin Pregnancies: An Observational Study from Two Alberta Dairy Herds
M.G. Colazo and D.J. Ambrose..... 376
- Application of Intravaginal Probiotics to Lower Uterine Infections, Expedite Uterine Involution and Improve Reproductive Performance of Holstein Dairy Cows
Q. Deng, J. F. Odhiambo, U. Farooq, T. Lam, S. M. Dunn, Y. Wang, M. Gänzle, and B. N. Ametaj..... 377
- Does Feeding Sugars Make Your Cows Sweet?
X. Gao and M. Oba..... 378
- Serum from Cows Fed Flaxseed Advanced Embryo Development from Lower Quality Oocytes In Vitro
R. Salehi, A. Ruiz-Sanchez, M. Oba, M.K. Dyck, D. J. Ambrose..... 379

Identification of Blood Predictive Biomarkers of Lameness in Transition Dairy Cows <i>G. Zhang, D. Hailemariam, Q. Deng, S. A. Goldansaz, S. M. Dunn, and B. N. Ametaj</i>	380
Effect of Integrating Synchronization Protocols and Automated Estrus Detection Systems on Pregnancy Rate to First Postpartum Artificial Insemination <i>T.A. Burnett, A.M.L. Madureira, B.F. Silper, A.C. Fernandes, and R.L.A. Cerri</i>	381
Factors Affecting Expression of Estrus of Lactating Dairy Cows Using Activity Monitors <i>A.M.L. Madureira, T.A. Burnett, B.F. Silper, D. Veira, N. Dinn, R.L.A. Cerri</i>	382
Relationships between Pre and Post Weaning Growth on Estrous Behaviour and Reproductive Parameters of Holstein Heifers <i>B. F. Silper, A. M. L. Madureira, T. A. Burnett, A. M. de Passillé, J. Rushen, R. L. A. Cerri</i>	383
Detailed Fingerprinting of Map Bacteria Provides a New Perspective on Johne's Disease Control and Transmission <i>Christina A Ahlstrom, Herman W Barkema, Jeroen De Buck</i>	384
Implications of Calf-To-Calf Transmission of <i>Mycobacterium Avium</i> Subspecies <i>Paratuberculosis</i> (MAP) for Johne's Disease Management <i>Caroline Corbett, Jeroen De Buck, Karin Orsel, Herman W. Barkema</i>	385
High Nutrition during Early Life Improves Reproductive Potential in Holstein Bulls <i>Alysha Dance, Jacob Thundathil, Randy Wilde, Patrick Blondin, John Osbourn, John Kastelic</i>	386
Developing a Marked, Live Attenuated Johne's Disease Vaccine Strain <i>Amanda J Mirto, Herman W Barkema, Jeroen De Buck</i>	387
Milk Proteins for Treating Obesity: Effects on Energy Balance and Glucose Control <i>Pezeshki, A., Yee, N.J., Fahim, A and Chelikani, P.K.</i>	388
Fecal Shedding In Dairy Calves Early After Experimental Infection with <i>Mycobacterium Avium</i> Subsp. <i>Paratuberculosis</i> <i>Rienske A.R. Mortier, Herman W. Barkema, Karin Orsel, Robert Wolf, Jeroen De Buck</i>	389

Communication Extension to Alberta Dairy Farmers <i>Caroline Ritter, Robert Wolf, Steve Mason, Jodi Flaig, Mike Slomp, Charlotte Pickel, Herman Barkema</i>	390
Effects of Milk Proteins on Cardiovascular Health and Energy Balance <i>Singh, A., Pezeshki, A., Zapata, R., Yee, N. and Chelikani, P.K</i>	391
Digital Dermatitis and Footbath Management on Dairy Farms in Alberta <i>Laura Solano, Herman W. Barkema, Miranda Marchand, Steve Mason and Karin Orsel</i>	392
Shedding of <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> (MAP) by Dairy Calves <i>Robert Wolf, Herman W. Barkema, Jeroen De Buck and Karin Orsel</i>	393
Association of Coagulase-Negative Staphylococcal Intramammary Infections and Somatic Cell Counts <i>Colleen E. Fitzpatrick, Amanda L. Byers, Christopher D. Luby</i>	394
Operant Conditioning of Urination by Calves <i>Alison Vaughan, Anne Marie de Passillé, Joseph Stookey, Jeffrey Rushen</i>	395