

Precision Dairy Management 2010 Conference Program

Tuesday March 2, 2010

- 1:30 – 1:45 **Welcome and Opening Remarks**
Gerrit Wensink, Chairman, Ontario Progressive Dairy Operators
- 1:45 – 2:00 *Blair Murray, Conference Co-Chair*
- Session 1: Introduction to Precision Dairy Farming (Jack Rodenburg, Chair)**
- 2:00 – 2:45 Precision Dairy Farming: Advanced Analysis Solutions for Future Profitability
Jeffrey Bewley, University of Kentucky, United States
- 2:45 – 3:00 Benchmarking Financial and Production Progress Allows More Effective Decisions
Bill Grexton, CanWest Dairy Herd Improvement, Canada
- 3:00 – 3:15 Labour Costs on Ontario Dairy Farms and their Implications for Precision Technologies
Jack Rodenburg, DairyLogix, Canada
- 3:15 – 3:30 Using Automated Internet Systems in Milk Quality Monitoring
Mark L. Kinsel, AgriMetrica LLC, United States
- 3:30 – 3:45 WASP Wireless Sensing Concept for Next Generation Herd Control
Pieter Hogewerf, Wageningen UR Livestock Research
- 3:45 – 4:00 DeLaval Herd Navigator®: Proactive Herd Management
Fernando Mazeris, DeLaval International
- 4:00 – 4:15 Huge Potential in Data from AMS from a Breeder’s Perspective
Uffe Lauritsen, Danish Milk Recording Organization, Denmark
- 4:15 – 4:30 Economic Benefits of Individual Cow Management
Henk Hogeveen, Utrecht University, the Netherlands
- 4:30 – 4:45 Reasons for Slow Adoption Rates of Precision Dairy Farming Technologies: Evidence
from a Producer Survey
Jeffrey Bewley, University of Kentucky, United States
- 4:45 – 5:00 **Milk Break**
- Session 2: Housing and Management Strategies for Robotic Milking (Harold House, Chair)**
- 5:00 – 5:20 Design Criteria for the Ideal Robotic Milking Barn
Jack Rodenburg, DairyLogix, Canada
- 5:20 – 5:40 Planning of Large Scale Farms with Robotic Milking Systems
Jan Harms, Bavarian Research Center for Agriculture, Germany
- 5:40 – 6:00 Automatic Milking in Pastoral Dairy Systems
Jenny G. Jago, DairyNZ, New Zealand
- 6:00 – 7:30 **Reception and Meal in the Exhibit Area**

- 7:30 – 10:00 **Producer Panel (Gerrit Wensink, Chair)**
A panel of 4 producers sharing their experiences incorporating precision management tools into their herd management programs. Panelists include:
- 1 - *Thomas Wynker, Artique Farms Ltd., Chilliwack, British Columbia, Canada*, who makes extensive use of cow management technology, RFID and DairyComp305 and Feedwatch electronic monitoring of feed ingredients in his 250 cow dairy herd.
 - 2 - *Poul DeGier, Pilgrim Dairy, Ponoka, Alberta, Canada*, milking 110 cows with two DeLaval VMS in a feed first application.
 - 3 - *Dale Hemminger, Hemdale Farms Inc., of Seneca Castle, New York, USA*, started with 4 milking robots in a 240 freestall barn in 2007. Last spring he converted existing facilities to robots and now milks his entire 800 cow dairy herd with 12 Lely AMS stalls.
 - 4 - *Bram Prins, President of Global Dairy Farmers and a dairy producer in the Netherlands*. Bram has adopted both robotic milking with 4 Insentec Galaxy stalls and automated feeding with a Pelon batching and track feeding system.

Wednesday March 3, 2010

- Session 3: Robotic Milking (Jenny Jago, Chair)**
- 8:00 – 8:45 Automatic Milking – Common Practice on Dairy Farms
Kees DeKoning, Wageningen University, the Netherlands
- 8:45 – 9:00 Economics of Small-Scale Dairy Farms Having Robotic Milking
Anna-Maija Heikkilä, MTT Agrifood Research, Finland
- 9:00 – 9:15 Understanding the Lying Behaviour Patterns of Cows Milked In Automated Systems
Trevor DeVries, University of Guelph, Canada
- 9:15 – 9:30 Comparison of Protocols to Estimate 24 Hour Percent Fat and Protein
David Kelton, University of Guelph, Canada
- 9:30 – 9:45 Methods to Estimate 24-hour Yields for Milk, Fat and Protein in Robotic Milking Herds
Karen Hand, CanWest Dairy Herd Improvement, Canada
- 9:45 – 10:00 Robotic Milking of Buffaloes: a Preliminary Survey on Milking Capacity of Automatic Milking Systems
Francesco M. Tangorra, Milan School of Veterinary Medicine, Italy
- 10:00 – 10:30 **Milk Break**
- Session 4: Dairy Calf Management and Feeding (Ken Leslie, Chair)**
- 10:30 – 11:00 A Practical Evaluation of Group Housing for Young Calves
Kathleen Shore, Grober Nutrition, Canada
- 11:00 – 11:15 Predicting Sleep and Lying Time of Calves with a Support Vector Machine Classifier Using Accelerometer Data
Matti Pastell, University of Helsinki, Finland

- 11:15 – 11:30 Benefits, Function and Operation of Computer-Controlled Calf Feeders
Markus Käck, Förster-Technik Company, Germany
- 11:30 – 11:45 Brix Refractometers for Assessment of Colostrum Quality
Vivianne Biemann, University of Guelph, Canada
- 11:45 – 12:00 Effects of Free-Access Feeding and Milk Replacer Acidification on Calf Performance and Development of Digestive Anatomy
Cynthia G. Todd, University of Guelph, Canada

12:00 – 1:00 **Lunch**

Session 5: Reproduction (John Heeney, Chair)

- 1:00 – 1:45 Heat Detection: Trends and Opportunities
Jeff Durkin, DeLaval, United States
- 1:45 – 2:00 Optimal Timing of Insemination Using Activity Collars
Doron Bar, SCR Engineers, Israel
- 2:00 – 2:15 Reproductive Management and Performance Can Be Improved by Use of DeLaval Herd Navigator®
Jens Yde Blom, Biosens, Denmark
- 2:15 – 2:30 Precision Management on Two Dutch Dairy Farms by Use of DeLaval Herd Navigator®
Nico Vreeburg, Vetvice, the Netherlands
- 2:30 – 2:45 Automated Daily Body Weight Measurements in Dairy Cattle: What Can We Do with Them?
Michael van Straten, Hachaklait, Mutual Society for Veterinary Services, Israel

2:45 – 3:15 **Milk Break**

Session 6: Dairy Cattle Health (Michael van Straten, Chair)

- 3:15 – 4:00 Challenges and Opportunities for Technology to Improve Dairy Health Management
Stephen LeBlanc, University of Guelph, Canada
- 4:00 – 4:15 A New Method of Analyzing Daily Milk Production and Electrical Conductivity to Predict Disease Onset
Joanna Lukas, University of Minnesota, Madison, United States
- 4:15 – 4:30 Walking Acceleration Patterns as a Method for Lameness Detection
Matti Pastell, University of Helsinki, Finland
- 4:30 – 4:45 Automated Methods for the Detection of Lameness and Analgesia
Núria Chapinal, University of British Columbia, Canada
- 4:45 – 5:00 HOBO Pendant G Acceleration Data Loggers: Adding Precision to the Assessment of Cow Comfort in Tie-Stall Operations
Paisley E. Canning, University of Guelph, Canada
- 5:00 – 5:15 Validation of a New Pedometry System for Behavioural Research and Lameness Detection in Dairy Cattle
Janet H. Higginson, University of Guelph, Canada

5:15 – 5:30 Prevalence and Risk Factors for Skin Lesions on Legs and Neck in Dairy Cattle in Free Stall Housing in Norway
Olav Osteras, Norwegian School of Veterinary Science

Session 7: Poster Session

5:30 – 6:45

7:00 – 10:00 **Conference Banquet**

Banquet Speaker: Dr. Roberta Bondar

Technology, Change and Keeping the Brain Young

Thursday March 4, 2010

Session 8: Mastitis Control and Milk Quality (Jens Yde Blom, Chair)

8:00 – 8:45 Sensors and Milk Quality - The Quest for the Perfect Alert
Henk Hogeveen, Wageningen University, the Netherlands

8:45 – 9:00 Improving Automatic Detection of Abnormal Milk
Erwin Mollenhorst, Faculty of Veterinary Medicine, Utrecht University, the Netherlands

9:00 – 9:15 Automatic Detection of Clinical Mastitis in Astronaut A3 Milking Robot
Rik van der Tol, Lely Industries, the Netherlands

9:15 – 9:30 Quarter Individual Milking in Conventional Milking Parlours
Ulrich Ströbel, Leibniz-Institute for Agricultural Engineering, Germany

9:30 – 9:45 Automatic Milking Systems: A Dutch Study on Risk Factors for Udder Health
Kees DeKoning, Wageningen University, the Netherlands

9:45 – 10:00 Field Evaluation of the PathoProof Mastitis PCR Assay for the Detection of Staphylococcus aureus Infected Cows Using DHI Samples
Charlotte Friendship, University of Guelph, Canada

10:00 – 10:15 Behavioural Changes of Dairy Cows During Drying-Off Using Abrupt Cessation of Milking
Kimberley A. Painter, University of Guelph, Canada

10:15 – 10:45 **Milk Break**

Session 9: Novel Technologies for In-Barn Application (Jeffrey Bewley, Chair)

10:45 – 11:30 Novel Technologies: Sensors, Data and Precision Dairy Farming
Ephraim Maltz, Volcani Institute, Israel

11:30 – 11:45 Use of RFID Ear Tags in Dairy Herd Management in Canada
Blair Murray, Ontario Ministry of Agriculture, Food and Rural Affairs, Canada

11:45 – 12:00 A Novel Method of Monitoring Mobility of Dairy Cows
Toby Mottram, eCow Ltd., United Kingdom

12:00 – 12:15 Use of Milk Lactose Concentration as an Indicator of Mastitis Following the Validation of a Novel In-Line Milk Analysis System Designed to Measure Milk Components
Hayden Jeremy Karp, Virginia Tech, United States

12:15 – 12:30 The Why and How of Robotic Slat Cleaners
Harold House, Ontario Ministry of Agriculture, Food and Rural Affairs, Canada

12:30 – 1:30 **Lunch**

Session 10:

1:30 – 2:30 **Poster Session**

Session 11: Automation in Feeding and Nutrition (Vern Osborne, Chair)

2:30 – 3:15 The Use of Precision Dairy Farming in Feeding and Nutrition
Robert Meijer, Hendrix Company, the Netherlands

3:15 – 3:45 **Milk Break**

3:45 – 4:00 Precision Animal Nutrition: The Role of Portable NIR on the Farm
John A. Foley, Cargill Animal Nutrition, Canada

4:00 – 4:15 Health and Production Characteristics for a Dynamic Feeding Model
Tom Vanholder, Lely Industries, Rotterdam, the Netherlands

4:15 – 4:30 Precision Feeding: NIR Online for Improving TMR Consistency
Alberto Barbi, Dinamica Generale, Italy

4:30 – 4:45 New Feeding Strategy: Individual Total Mixed Ration Based on Metabolic State
Tom Vanholder, Lely Industries, Rotterdam, the Netherlands

4:45 – 5:00 Automated BCS Scoring System Using Template Matching by Bayesian Sequential Hypothesis
S. Velmurugan, IIT Delhi, India

5:00 – 5:15 Rumination Collars: What Can They Tell Us
Doron Bar, SCR Engineers, Israel

5:15 – 5:30 Is a Lifetime Rumen Monitoring Bolus Possible?
Toby Mottram, eCow Ltd., United Kingdom

5:30 – 5:45 Recent Studies Using a Reticular Bolus System for Monitoring Dairy Cattle Core Body Temperature
Jeffrey Bewley, University of Kentucky, United States

5:45 – 6:00 Presentation of Afimilk Young Scientist Award; Conference Concludes

Poster Presentations (Located in the New York, Paris and Venice Rooms)

1. Benchmarking Financial and Production Progress Allows More Effective Decisions
Bill Grexton, CanWest Dairy Herd Improvement, Canada
2. Labour Costs on Ontario Dairy Farms and their Implications for Precision Technologies
Jack Rodenburg, DairyLogix, Canada
3. Using Automated Internet Systems in Milk Quality Monitoring
Mark L. Kinsel, AgriMetrica LLC
4. WASP Wireless Sensing Concept for Next Generation Herd Control
Pieter Hogewerf, Wageningen UR Livestock Research
5. DeLaval Herd Navigator®: Proactive Herd Management
Fernando Mazeris, DeLaval International
6. Huge Potential in Data from AMS from a Breeder's Perspective
Uffe Lauritsen, Danish Milk Recording Organization, Denmark
7. Economic Benefits of Individual Cow Management
Henk Hogeveen, Utrecht University, the Netherlands
8. Reasons for Slow Adoption Rates of Precision Dairy Farming Technologies: Evidence from a Producer Survey
Jeffrey Bewley, University of Kentucky, United States
9. Money Hidden in the Dairy Farm
Udi Golan, SAE Afikim
10. New Services for Precision Dairy Farming Based on Automatic Data Transfer Between Collective Cattle Databases and Computerized Milking Systems
Rene Rognant, FIEA, France
11. Design Criteria for the Ideal Robotic Milking Barn
Jack Rodenburg, DairyLogix, Canada
12. Planning of Large Scale Farms with Robotic Milking Systems
Jan Harms, Bavarian Research Center for Agriculture, Germany
13. Automatic Milking in Pastoral Dairy Systems
Jenny G. Jago, DairyNZ, New Zealand
14. Dairy Barn Plans and Layouts, Innovations and Cow Comfort
Yves Choinière, Quebec, Canada

15. Economics of Small-Scale Dairy Farms Having Robotic Milking
Anna-Maija Heikkilä, MTT Agrifood Research, Finland
16. Understanding the Lying Behaviour Patterns of Cows Milked In Automated Systems
Trevor DeVries, University of Guelph, Canada
17. Comparison of Protocols to Estimate 24 Hour Percent Fat and Protein
David Kelton, University of Guelph, Canada
18. Methods to Estimate 24-hour Yields for Milk, Fat and Protein in Robotic Milking Herds
Karen Hand, CanWest Dairy Herd Improvement, Canada
19. Robotic Milking of Buffaloes: a Preliminary Survey on Milking Capacity of Automatic Milking Systems
Francesco M. Tangorra, Milan School of Veterinary Medicine, Italy
20. Evaluation of Calf Growth fed Milk Replacer in Individual Stalls or in Group Pens with Automatic Feeders
Kathleen Shore, Grober Nutrition, Canada
21. Evaluation of Calf Health in Group Housing
Kathleen Shore, Grober Nutrition, Canada
22. Predicting Sleep and Lying Time of Calves with a Support Vector Machine Classifier Using Accelerometer Data
Matti Pastell, University of Helsinki, Finland
23. Benefits, Function and Operation of Computer-Controlled Calf Feeders
Markus Käck, Förster-Technik Company, Germany
24. Brix Refractometers for Assessment of Colostrum Quality
Vivianne Biemann, University of Guelph, Canada
25. Effects of Free-Access Feeding and Milk Replacer Acidification on Calf Performance and Development of Digestive Anatomy
Cynthia G. Todd, University of Guelph, Canada
26. Precision Calf Feeding: History, Components, Potential
Markus Käck, Förster-Technik, Germany
27. Optimal Timing of Insemination Using Activity Collars
Doron Bar, SCR Engineers, Israel

28. Reproductive Management and Performance Can Be Improved by Use of DeLaval Herd Navigator®
Jens Yde Blom, Biosens, Denmark
29. Precision Management on Two Dutch Dairy Farms by Use of DeLaval Herd Navigator®
Nico Vreeburg, Vetvice, the Netherlands
30. Automated Daily Body Weight Measurements in Dairy Cattle: What Can We Do with Them?
Michael van Straten, Hachaklait, Mutual Society for Veterinary Services, Israel
31. The Use of Body Temperature to Detect Estrus and Predict Optimal Time of Insemination
Erwin Mollenhorst, Department of Farm Animal Health, Faculty of Veterinary Medicine, Utrecht University, the Netherlands
32. A New Method of Analyzing Daily Milk Production and Electrical Conductivity to Predict Disease Onset
Joanna Lukas, University of Minnesota, Madison, United States
33. Walking Acceleration Patterns as a Method for Lameness Detection
Matti Pastell, University of Helsinki, Finland
34. Automated Methods for the Detection of Lameness and Analgesia
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35. HOBO Pendant G Acceleration Data Loggers: Adding Precision to the Assessment of Cow Comfort in Tie-Stall Operations
Paisley E. Canning, University of Guelph, Canada
36. Validation of a New Pedometry System for Behavioural Research and Lameness Detection in Dairy Cattle
Janet H. Higginson, University of Guelph, Canada
37. Prevalence and Risk Factors for Skin Lesions on Legs and Neck in Dairy Cattle in Free Stall Housing in Norway
Olav Osteras, Norwegian School of Veterinary Science
38. Clinical Effects and Economic Benefit of an Internal Teat Sealant Administered at Dry-Off
Paul Baillargeon, Pfizer Animal Health, Canada
39. Time Series Analysis of Live Weight as Health Indicator
Rik van der Tol, Lely Industries NV, Dairy Equipment, Maassluis, the Netherlands
40. Improving Automatic Detection of Abnormal Milk
Erwin Mollenhorst, Faculty of Veterinary Medicine, Utrecht University, the Netherlands

41. Automatic Detection of Clinical Mastitis in Astronaut A3 Milking Robot
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45. Behavioural Changes of Dairy Cows During Drying-Off Using Abrupt Cessation of Milking
Kimberley A. Painter, University of Guelph, Canada
46. Acquisition and Assessment of Teat Cup Cluster Vacuum Records in Milking Time Tests
Odd Rønningen, TINE BA, Norway
47. A Field Study on Teat-end Vacuum in Different Milking Systems and its Effect on Teat Condition
Angelika Haeussermann, Institute of Agricultural Engineering, Christian-Albrechts-University Kiel
48. Mathematical Modeling of Vacuum Related Variables in Conventional Milking Systems Using Response Surface Methodology
Ulrich Ströbel, Leibniz-Institute for Agricultural Engineering Potsdam-Bornim, Germany
49. Use of RFID Ear Tags in Dairy Herd Management in Canada
Blair Murray, Ontario Ministry of Agriculture Food and Rural Affairs, Canada
50. A Novel Method of Monitoring Mobility of Dairy Cows
Toby Mottram, eCow Ltd., United Kingdom
51. Use of Milk Lactose Concentration as an Indicator of Mastitis Following the Validation of a Novel In-Line Milk Analysis System Designed to Measure Milk Components
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59. Is a Lifetime Rumen Monitoring Bolus Possible?
Toby Mottram, eCow Ltd., United Kingdom
60. Recent Studies Using a Reticular Bolus System for Monitoring Dairy Cattle Core Body Temperature
Jeffrey Bewley, University of Kentucky, United States
61. The Kempen Feeding System
William Woodley, Nutreco, Shur-Gain, Canada
62. Overview of the Development of an Advanced Precision Feeding System for the Dairy Industry
Steven E. Sawell, University of Waterloo, Canada
63. The Change of the Height of the Ration on Trough in a Free-Stall Barn
Shigeru Morita, Rakuno Gakuen University, Japan