6th Annual Conference

Playing the Long Game:

Capturing Value in Livestock Innovation

Edmonton, Alberta
October 13-14, 2015

This two-day conference brings together experts from around the world to present on innovation and implementation in the livestock sector focusing on

- sustainability,
- value chains,
- traceability,
- communications,
- risk management, and
- genetics.

University of Alberta
Faculty of Agricultural, Life & Environmental Sciences

livestock gentec

CBBC
Canadian Beef Breeds Council

Alberta Innovates Bio Solutions

Alberta Innovates Bio Solutions leads science and innovation to grow prosperity in Alberta's agriculture, food and forestry sectors.

Alberta Innovates Bio Solutions offers funding, advice and connections to help create new knowledge, technologies and products in the following areas:

- Sustainable Production (including core funding for Livestock Gentec)
- Bioindustrial Innovation
- Food Innovation
- Ecosystem Services and Biodiversity
- Biological Greenhouse Gas Management Program
- Alberta Prion Research Institute

FOR MORE INFORMATION

Call 780-427-1956 or email BIO@albertainnovates.ca

bio.albertainnovates.ca

Alberta Canada

Funded by the Government of Alberta

MESSAGE FROM ALBERTA AGRICULTURE AND FORESTRY

Alberta Government

Alberta Agriculture and Forestry is pleased to partner once again with Livestock Gentec to offer a session that addresses how the complexities of cattle-production data and records influence business decisions. Our established partnership is proof that we are playing this long game together.

With featured speakers who have track records of putting their words into action, we appreciate the need for long-term plans that include new technologies and innovations. Livestock enterprises are a system, and should not be viewed in isolation. Our resources and time are very precious commodities that deserve efficient allocation.

While the volume of information and data for cattle producers has ballooned over the years, meaningful interpretation is key to using it to make sound business decisions. You cannot manage what you do not measure—nor can you manage what you have not interpreted properly.

Susan Markus
Livestock Research and Extension Division

TUESDAY MORNING, OCTOBER 13

All sessions in the Empire Room. All meals and breaks in the Royal Room

ALBERTA AGRICULTURE AND FORESTRY PRESENTS

Moderator: Susan Markus, Livestock Research Scientist, Alberta Agriculture and Forestry

08:00 **Registration and Coffee**

08:55 – 09:00 **Welcome**
Susan Markus, Livestock Research Scientist, Alberta Agriculture and Forestry

09:00 – 09:40 **Making Sense in a Complex World**
Jeff Millang, Director, Livestock and Farm Business Branch, Alberta Agriculture and Forestry

09:40 – 10:20 **Traceability and Transparency: Tamper-Proof Traceability Using Biometric Identifiers**
Jim Hansen, Consultant, Identigen Ltd.

10:20 – 10:35 **Industry Momentum Builds for BIXSco: Collaboration and Connectivity**
Hubert Lau, CEO, and Deborah Wilson, Senior Vice President, BIXSco Inc.

10:35 – 11:05 **Coffee Break**

11:05 – 11:20 **Telling the World**
Colin Coros, CEO, Delta Genomics

11:20 – 12:00 **The A to Z of COP (Cost of Production)**
Kathy Larson, Research Economist, Western Beef Development Centre

12:00 – 13:00 **Lunch**

TUESDAY MORNING, SPEAKERS

Making Sense in a Complex World

Jeff Millang

Managing a beef herd requires many skills. In today's information age, where communication is a constant bombardment and science and technology advance so quickly, how do you make sense of it all and make good choices? By setting longer-term strategic goals and using the information available to make educated assumptions about the future, you can make the best choices to achieve your goals. There is no silver bullet or one right way to succeed. Jeff's presentation will suggest approaches that will help cattle owners evaluate these choices and navigate towards their desired outcome

Traceability and Transparency: Tamper-Proof Traceability Using Biometric Identifiers

Jim Hansen

Pilot projects are used to evaluate, examine and demonstrate—with the ultimate objective "What is the cost return?" Does the data collected from these projects assist and improve strategic decision making? This presentation will highlight the findings from pilot projects using biometric identifiers, with the emphasis on Identigen's commercial ranch multi sire parentage verification project.

Industry Momentum Builds for BIXSco: Collaboration and Connectivity

Hubert Lau and Deborah Wilson

BIXS is helping the beef industry unlock the value of data and reflect our pride in our industry through connectivity and collaboration. This is achievable by working with the Canadian beef industry to find efficiencies along the value chain while meeting consumers' demand for more information.

Telling the World

Colin Coros

Innovation, technology and genomics all play an increasingly important role in ensuring the continuing sustainability of the livestock sectors. Part of the challenge is communicating the positive messages emanating from the livestock industry as they relate to current successes and the future role of technology to ensure agriculture is able to continue feeding the world

The A to Z of COP (Cost of Production)

Kathy Larson

Nearly every producer has heard of cost of production (COP), but few have gone through the process of calculating it. Learn why it's important to calculate COP for your own operation, the numbers you need to track and the tools available to crunch your numbers and generate a break-even for the different parts of your operation. Kathy will share COP survey findings from Alberta to Kansas to give you a sense of the average costs for cow-calf production and to demonstrate the variability that exists between operations.

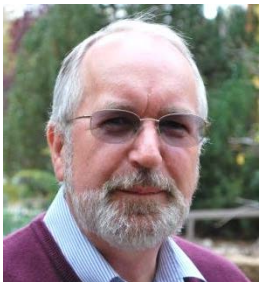
MESSAGE FROM LIVESTOCK GENTEC

Welcome to the sixth edition of the Livestock Gentec annual conference. We look forward to seeing familiar faces and meeting new ones.

We pay special attention to finding out what you want to hear from us and what you expect this conference to give you. This year's edition promises to be as information-packed as its predecessors. We are also repeating the very successful partnership with what is now known as Alberta Agriculture and Forestry (A&F) to present an informative session on the first morning of the conference. The following day and a half will include talks on traceability, sustainability and risk management; project updates; and a look at the British experience with genomics. As usual, the sessions are intended to be interactive, practical, and to help you make the best decisions for success. And back by popular demand… we are going to the Pampa Brazilian Steakhouse for a rodizio-style meal that will delight all appetites.

I take this opportunity to highlight that we have settled back into our traditional October space for the conference. Last year, we moved it to August to coincide with our faculty's centenary celebrations and the renaming of the Roy Berg Kinsella Research Station in honour of the man who conducted such remarkable research there. I am delighted to report that the renaming ceremony provided a moving tribute to Dr. Berg, and the tours of the ranch to demonstrate the research were extremely well received. This year, we held the field day at the Lacombe Research Station in August in partnership with Agriculture and Agri-Food Canada. We owe a debt of gratitude to François Eudes, Mueen Aslam and all staff at Lacombe for their effort and support in make the event such a success.

Thank you to our sponsors for making this event possible. Thank you to our funders, partners and collaborators for envisioning a Canadian livestock industry that is the envy of the world. And thank *you* for attending, sharing and learning with us.



Graham Plastow
CEO


CANADIAN
Purebred Beef
Genetics
Forefront
of
Technology
• PREDICTABLE GENETICS
• PERFORMANCE DRIVEN
• TRUSTED PEDIGREES
• DATA COLLECTION
CANADIAN BEEF BREEDS COUNCIL
165, 6815 - 8th Street N.E. • Calgary, Alberta T2E 7H7 • Canada
Telephone: (403) 730-0350 • Fax: (403) 275-8490
Email: info@canadianbeefbreeds.com
www.canadianbeefbreeds.com
@CanBeefBreeds
Canadian Beef Breeds Council
CBBC
CANADIAN BEEF BREEDS COUNCIL

TUESDAY AFTERNOON, OCTOBER 13

LIVESTOCK GENTEC PRESENTS

Moderator: Cornelia Kreplin, Executive Director, Sustainable Production and Food Innovation, AI Bio

13:00 – 13:15 **Welcome from Alberta Innovates Bio Solutions**
Cornelia Kreplin, Executive Director, Sustainable Production and Food Innovation, AI Bio

13:15 – 14:30 **Beef and the Era of Sustainability: Sector Perspectives and Panel Discussion**
1:15 Jeff Fitzpatrick-Stilwell, Senior Manager, Sustainability, McDonald's Canada
1:30 Morgan Chattaway, Cow/Calf Producer, Bar S Ranch
1:45 Stuart Thiessen, Feedlot Operator, Namaka Farms
2:00 Panel Discussion

14:30 – 15:00 **Vigour and Colostrum Consumption of the Newborn Beef Calf**
Elizabeth Homerosky, Cattlemen's Young Leader

14:45 – 15:15 **Coffee Break**

15:10 – 15:30 **Getting into the Long Game: Cost of Entry**
Mike McMorris, General Manager, BIO

15:30 – 16:15 **Traceability, Niche Markets and Value-Chain Integration**
Cory Van Groningen, Co-owner, VG Meats and Board Member, Ontario Independent Meat Processors Association

16:15 – 17:45 **Poster Session**

17:45 **Leave for Pampa Brazilian Steakhouse**

TUESDAY AFTERNOON, SPEAKERS

Beef and the Era of Sustainability: Sector Perspectives and Panel Discussion

Jeff Fitzpatrick-Stilwell, Morgan Chattaway, Stuart Thiessen

In this session, Jeff will talk about the McDonald's vision for the Verified Sustainable Beef program. Morgan and Stuart will discuss their motivation and experience in the verification process from the cow/calf and feedlot perspectives and their experience in certifying their operations. The session will conclude with a panel discussion and questions from the audience

Vigour and Colostrum Consumption of the Newborn Beef Calf

Elizabeth Homerosky

Vigour is essential in newborn beef calves as it helps to ensure the timely and adequate colostrum consumption required for successful transfer of passive immunity and long-term health. For this study, data were collected from 77 assisted and unassisted calves born on a large commercial cow-calf operation near Calgary to better establish the impacts of calving difficulty on the vigour of the newborn beef calves. Clinical signs predictive of a newborn calf's ability to consume colostrum unassisted in a timely manner will be presented.

Getting into the Long Game: Cost of Entry

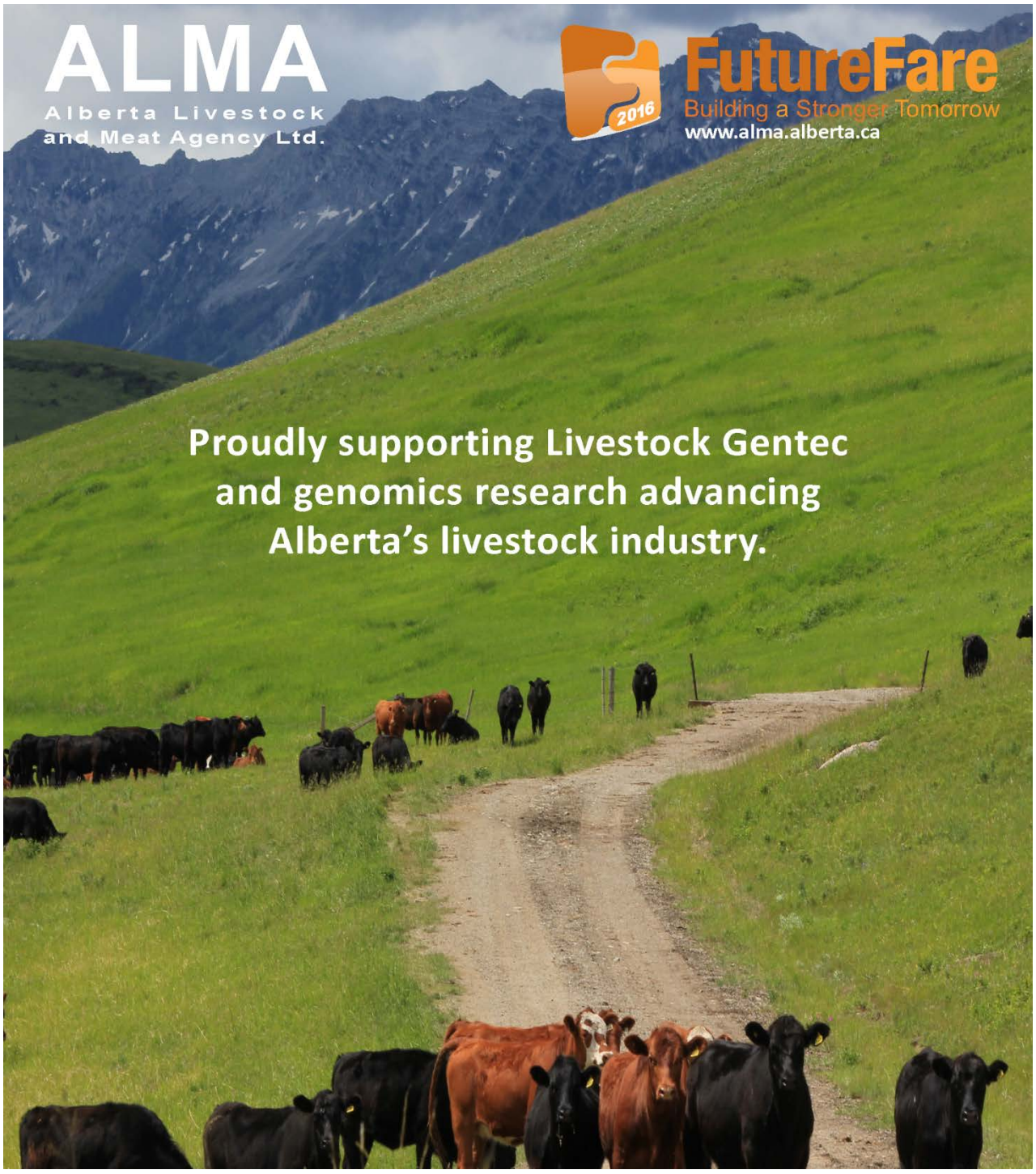
Mike McMorris

Beef producers want to benefit from innovations like genomics. All good businesses need to be in the long game to stay around… but how do you get started? What does it take to get into the game?

Traceability, Niche Markets and Value-Chain Integration

Cory Van Groningen

Cory has been in the meat business all his life. He will share some of the reasons his family decided to expand into beef production and begin working with approximately 40 Ontario farmers. Traceability that leads to a high-integrity product has been key to growth in this operation and a passion of the Van Groningen's.


ALMA
Alberta Livestock
and Meat Agency Ltd.
2016
FutureFare
Building a Stronger Tomorrow
www.alma.alberta.ca
Proudly supporting Livestock Gentec
and genomics research advancing
Alberta's livestock industry.


superior genetics are the
ANGUS ADVANTAGE
Proud partners with Livestock Gentec on the development and adoption of genetic selection tools and technology that enable us to deliver the Angus Advantage: superior genetics for maternal abilities, structural soundness and carcass quality.
Canadian Angus
Canadian Angus Association
292140 Wagon Wheel Blvd
Rocky View County, AB T4A 0E2
1-888-571-3580 www.cdnangus.ca

WEDNESDAY MORNING, OCTOBER 14

All sessions in the Empire Room. All meals and breaks in the Royal Room

LIVESTOCK GENTEC PRESENTS

07:30 – 09:00 **Breakfast**

Moderator: Ruurd Zijlstra, Chair, Agricultural, Food and Nutritional Science, University of Alberta

09:00 – 09:15 **The ALMA-Gentec Story from the Beginning**
David Chalack, Board Chair, ALMA

09:15 – 10:00 **Pulling Value Through the Beef Chain: The British Experience**
Mike Coffey, Professor, Scotland's Rural College

10:00 – 10:15 **Bovine Pathogen Genomics Research**
Frank van der Meer, Assistant Professor, faculties of Veterinary Medicine and Medicine, University of Calgary

10:15 – 10:45 **Coffee Break**

10:45 – 11:30 **Genetic Improvement in Beef Cattle: What Is Possible?**
Brian Wickham, Managing Director, ConsultWickham

11:30 – 11:45 **Initiatives for the Advancement of Beef Genetics in Canada**
John Crowley, Director of Scientific and Industry Advancement, Canadian Beef Breeds Council

11:45 – 13:00 **Lunch**

WEDNESDAY MORNING, SPEAKERS

The ALMA-Gentec Story From the Beginning

David Chalack

The ALMA-Gentec story starts with the Alberta Bovine Genomics Program, before the formation of Livestock Gentec. Since Gentec's formation six years ago, ALMA has been its the largest single supporter, providing support for both researchers and projects. This presentation outlines some details of how we have worked together to get to where we are.

Pulling Value Through the Beef Chain: The British Experience

Mike Coffey

The beef industry in the UK has difficulty transmitting the market and pricing signals needed to identify the products and attributes most valued by consumers. Working with the British Limousin Cattle Society and ABP Food Group, Mike helped develop a value chain the success of which rested in part on its ability to pass these market signals (including those related to carcass value and tenderness) from consumers back to the packers, feeders and breeders. This presentation discusses what brought this about, how it was done, what it accomplished … and if it is relevant to the Canadian market.

Bovine Pathogen Genomics Research

Frank van der Meer

Livestock and the genomics of infectious disease have become a major research focus for UCVM. We have teams developing tools and approaches for parasites, bacteria, viruses and prions. Our work explores host-pathogen interactions and how the microbiome (all bacteria in an animal), the virome (all viruses in an animal) and parasite communities interact and affect the host. This will lead to a new way of thinking about common diseases and a better understanding of the influence of antimicrobials and vaccines on these pathogen communities within their hosts.

Genetic Improvement in Beef Cattle: What Is Possible?

Brian Wickham

As our understanding of animal genetics and the corresponding increase in computing power available to tackle genomic improvement has increased and the cost of these technologies has fallen, much more rapid improvements are possible. We are now in a situation where the application to commercial herds is expanding, and many producers are looking for information on cost, risk, as well as if, when, and how they should get involved. Brian is helping the Canadian beef industry to capture the benefits of genetic improvement based in part on his Irish experience.

Initiatives for the Advancement of Beef Genetics in Canada

John Crowley

As is the case with the beef industry in general, the Canadian Beef Breeds Council is continually adapting to the needs of our members as they respond to changing market conditions and emerging technologies. In this presentation, John outlines the role of CBBC, its strategies and new projects focusing on implementing genomic selection within the breed associations.

WEDNESDAY AFTERNOON, OCTOBER 14

LIVESTOCK GENTEC PRESENTS

Moderator: Tom Lynch-Staunton, Issues Manager, Canadian Cattlemen's Association

13:00 – 13:15 **Indirect Assessments of Feed Efficiency in Replacement Beef Heifers**
Ellen Crane, Cattlemen's Young Leader

13:15 – 14:00 **Communications as a Tactic of Risk Management**
Andrew Powell, Centre Director, Centre for Risk Communication, Asia

14:00 – 14:45 **The Need for Innovation in Poultry Genetics**
Mitch Abrahamsen, Vice President, Research and Development, Cobb-Vantress Inc.

14:45 – 15:15 **Coffee Break**

15:15 – 15:30 **Genome Canada/Genome Alberta Funding Update**
David Bailey, CEO, Genome Alberta

15:30 – 16:15 **Genome Canada Project Updates**
3:30 Paul Stothard, Genome Canada Project Lead, Cattle Genome
3:45 Michael Dyck, Genome Canada Project Lead, Swine Health
4:00 Filippo Miglior, Genome Canada Project Lead, Dairy

16:15 – 16:30 **Poster Awards Presented by GrowSafe Systems**

16:30 **Closing Remarks**
Graham Plastow, CEO, Livestock Gentec

WEDNESDAY AFTERNOON, SPEAKERS

Indirect Assessments of Feed Efficiency in Replacement Beef Heifers

Ellen Crane

The direct assessment of feed efficiency is not practical or cost-effective for commercial herds. However, the indirect assessment of RFI through biological indicators constitutes an avenue to optimize the phenotyping for feed efficiency. Analysis of diverse systems including post-absorptive metabolism are potential sources of novel phenotypes. Our objective was to verify the association between the complete blood cell count parameters and blood plasma metabolites with feed efficiency in replacement heifers. Ellen explains the findings and implications of these approaches.

Communications as a Tactic of Risk Management

Andrew Powell

In business, it is often thought that a great idea will endure as a result of its own merit but not everyone thinks that innovation is great. Innovation means change… and change often makes people (some of whom are your customers) uncomfortable. One need only look at the current controversy surrounding vaccines or enhancements in food production. Awareness of facts does not equate to acceptance. Facts can comprise as little as 5% when the degree of risk is evaluated. This may be irrational but it does follow certain heuristic patterns of decision-making. Understanding these patterns can help you use communications as a means of risk mitigation.

The Need for Innovation in Poultry Genetics

Mitch Abrahamsen

Increasing feed prices have had a significant impact on the cost of broiler production, which has led to the search for alternative, cost-effective feed formulations that challenge the ability of broilers to perform as efficiently as in the past. Consumers' interest in how their food is produced has resulted in changes in government regulations, the redefining of the role of antibiotics and other health management tools, and the need to quantify and address the environmental impact of animal production. This has challenged genetics companies to develop products that are profitable for the industry, environmentaly sustainable and socially acceptable. This requires the broiler industry to implement new technologies to improve performance to ensure that the world's food security needs are provided by chicken meat.

Genome Canada/Genome Alberta Funding Update

David Bailey

Genome Alberta's partnership with the Alberta Livestock and Meat Agency has resulted in exciting outcomes, including supporting the competiveness of Alberta's researchers in national competitions. Last year, we launched the second Applied Livestock Genomics Program, which resulted in three more large-scale projects, two of which are supported by Genome Canada. Recent initiatives span the innovation spectrum from the Disruptive Innovation in Genomics Competition to the Genomics Applications Partnership Program.

Genome Canada Project Updates

Genome Canada projects have enabled Gentec and its partners, including the University of Alberta, CGIL (University of Guelph), AAFC and industry to accelerate livestock genomics applications. 2010 saw the Canadian Cattle Genome Project and a major project targeting swine diseases. 2015 resulted in dairy and another project in the genomics of swine health. You will hear updates on the sequencing of more than 350 Canadian bulls and the refinement of genetic variant identification. These data and tools have already found a significant mutation impacting susceptibility to PRRS, and will drive our efforts to improve the sustainability of beef and dairy production in Canada.

delta genomics

Helping the livestock industry increase profitability through custom DNA services and tools.

Who we are

Delta Genomics Centre is a national, not-for-profit DNA service facility and the first full DNA lab specializing in livestock in Canada. Delta was created as the service arm of Livestock Gentec to facilitate the transfer of innovative technologies to the livestock industry. We offer biobanking, genotyping, and next generation sequencing, combined with contract research services to provide a complete genomics solution.

Our goal

To increase the profitability, competitiveness, and sustainability of the Canadian livestock industry.

What we do

Biobanking: We offer the storage and distribution of samples for all livestock species.
Genotyping: We perform low-density and high-density genotyping for all the commercially available genotyping panels. We also provide the custom GeneSeek Genome Profiler™ array of products.
Sequencing: We provide next generation sequencing and bioinformatics for both DNA and RNA analysis.
Contract Research: We can provide validation, demonstration, and consultation services for all livestock genomic applications.



What we have achieved so far

Since our launch in 2011, we have created an advanced operation that provides industry and researchers with specialized resources for the advancement of genomic technology adoption. We have helped enable the transition to a lower cost SNP parentage technology in the purebred Canadian beef industry. We have supported over 20 major genomics research projects representing 8 different livestock species. And along with Livestock Gentec, we have helped establish an innovation network that is enabling the adoption of genomic technologies across the Canadian livestock industry.

www.deltagenomics.com info@deltagenomics.com 1.780.492.2538
4244 -10230 Jasper Avenue Edmonton, Alberta, Canada T5J4P6

POSTERS

1. A whole-genome transmission disequilibrium test of fetal autolysis in a porcine reproductive and respiratory syndrome virus challenge. Presented by Y. Tianfu.
2. Identifying genomic predictors of vaccine response in swine. Presented by G. Plastow.
3. Genetic and genomic identification of dairy cattle based on immune response traits to improve dairy health. Presented by L. Wagter-Lesperance.
4. Plasma levels of volatile fatty acids as potential predictors of feed intake in beef cattle. Presented by B.K. Karisa.
5. Genome wide mRNA analysis of rumen papillae revealing distinct response during rapid grain adaption in beef cattle. Presented by K. Zhao.
6. Genomic prediction of pig feed efficiency component traits using 80K SNP chip. Presented by C. Zhang.
7. Genomic selection for disease resilient pigs using immune traits from blood samples. Presented by J. Lim.
8. Characterization of innate inflammatory responses against *Salmonella typhimurium* in a swine peritoneal model. Presented by J.A.M. Bayona.
9. Characterization of bacterial colonization in large intestine of pre-weaned dairy calves using quantitative real time-PCR. Presented by Y. Song.
10. Testing production performance and foraging behaviour of cattle on pasture with divergent molecular breeding values for residual feed intake. Presented by C. Moore.
11. Optimizing feed intake recording to increase the rate of improvement for feed efficiency in beef cattle. Presented by G. Manafiazar.
12. Methane and carbon dioxide emissions from high and low residual feed intake beef heifers. Presented by G. Manafiazar.
13. Improving feed efficiency and reducing methane emissions from dairy cows using milk mid-infrared spectroscopy to support “green Alberta milk”. Presented by D. Hailemariam.
14. Improvement of cow feed efficiency and the production of consistent quality beef using molecular breeding values for RFI and carcass traits: The “Kinsella Breeding Project”. Presented by C. Ekine-Dzivenu.
15. Genome wide association studies (GWAS) for milk production traits in Mediterranean water buffalo. Presented by J.J. Liu.
16. Acute phase proteins: potential biomarkers to predict pig resilience. Presented by Z. Yang.
17. Accuracy of genomic prediction of breed composition and heterosis in beef cattle using 50K SNP genotype. Presented by E.C. Akanno.
18. Use of genomic tools to improve feed efficiency in purebred Hereford cattle. Presented by J. Crowley.

19. Genomics and the Hays Converter breed. Presented by D. Trautman.
20. Developing a small SNP panel to predict feed efficiency in Canadian beef cattle. Presented by N. Lansink.
21. Diurnal pattern of methane emission from lactating dairy cows. Presented by D. Hailemariam.
22. Genome-wide association study for temperament score in Nellore cattle. Presented by T.S. Valente.
23. Genome-wide linkage disequilibrium comparisons to detect selection signatures in pigs. Presented by X.L. Li.
24. Developing mating allocation strategy including dominance effects in crossbred cattle. Presented by X.L. Li.

GenomeAlberta

Notes

Playing the Long Game:
Capturing Value in Livestock Innovation

Platinum

Gold

Silver