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# Greetings



## A Message from Agriculture and Agri-Food **Minister Gerry Ritz**

Hon. Gerry Ritz, PC, MP Minister of Agriculture and Agri-Food Ottawa

The growing world market for protein presents an exciting opportunity for livestock producers around the globe. But to capture that opportunity and stay a step ahead of the competition requires highquality, highly productive genetics.

With our world-renowned genetics and highly productive and efficient animals, Canada can help livestock producers around the world maximize their productivity and profitability in today's burgeoning global marketplace. Our genetic improvement and evaluation programs are driving the development of high-performance breeding stock, helping farmers in all corners of the globe take advantage of the most advanced animal breeding technologies to produce superior livestock.

But our commitment doesn't end there. Canada has a stellar reputation as a trustworthy source of agriculture products. We go the distance with our customers to provide the after-sales service to ensure our Canadian genetics truly breed success.

Today, our customers in over 100 countries around the world turn to Canada for our excellent animal health. To ensure they have free and unfettered access to our products, our Government is working hard with our trading partners to keep trade rooted firmly in science.

I am proud of Canada's livestock breeders and of our partnership in supplying genetics to global markets. I want to congratulate the Canadian Swine Exporters Association, the Canadian Livestock Genetics Association and the Canadian Beef Breeds Council for developing this valuable resource showcasing Canada's world-class livestock genetics.

It all adds up to the "Canadian advantage" and I urge you to discover the difference Canadian livestock genetics can make in your industry. Thanks for your interest. We're eager to be a partner in your success.

aufty

Minister of Agriculture and Agri-Food



Ministre de l'Agriculture et de l'Agroalimentaire

### Ottawa, Canada K1A 0C5

### Growing Forward 2

Important changes to Growing Forward 2 came into effect in 2013. Here is a quick synoposis of the changes that have taken place. For full details and explanations, go to www.agr.gc.ca.

### Agrilnsurance

Agrinusurance Agrinusurance continues to offer the same protection against the financial im-pacts of production losses caused by hail, drought, flooding, disease and other natural hazards. Producers and governments share the cost of insurance premi-ums for eligible commodities. Agrinusurance is delivered provincially by a crown corporation or a branch of the agriculture department in each province and ter-

### AgriStability

AgriStability AgriStability offers protection against large declines in farm income caused by circumstances such as low prices, rising input costs and production losses. *70 Per Cent Margin Coverage*: Beginning in the 2013 program year, govern-ments will provide assistance once a producer's margin falls below 70 per cent of their historical reference margin calculated as the average program margin over three of the previous five years, excluding both the highest and lowest years. *Harmonized Assistance Rates*: For the 2013 program year, governments will provide support for both the positive and the negative portions of a margin decline at 70 per cent of the loss. Harmonizing assistance at 70 per cent simplifies the payment calculation and increases assistance in cases of pearine margins to those payment calculation and increases assistance in cases of negative margins to those who are eligible. *Reference Margin Limit*: For the 2013 program year, payment calculations will

be based on the lower of the historical reference margin or the average allowable expenses in the years used to calculate the reference margin. This limit has been introduced to better target AgriStability assistance to cases of severe income losses, rather than to profit fluctuations.

### Agrilnvest

Agrinvest Agrinvest helps cover income declines and supports investments that help miti-gate risks. For the 2013 program year, producers can now contribute up to 100 per cent of their Allowable Net Sales (ANS) once per year, with the first one per cent matched by governments. Annual government matching contributions are subject to a limit of \$15,000 per Agrilnvest account.

### AgriRecovery

AgriRecovery helps producers with the cost of activities necessary for recovery following natural disaster events. The AgriRecovery Framework allows governments to collaborate, on a case-by-case basis, to:

- Assess the impacts of natural disasters (e.g., disease, pests, weather events,
- etc.); and Help affected producers with extraordinary costs of recovery where there is need for assistance beyond existing programs.

### Advance Payments Program

Producers also have access to the Advance Payments Program (APP), a federally funded program that complements the BRM suite. The APP helps cop and livestock producers with low interest guaranteed loans which provide them with greater flexibility in the marketing of their commodities.



# Producing the best cattle and the best beef — is achieved with Canadian purebred genetics

Whether you're breeding for **performance traits** including birth weight, growth and feed efficiency, or **carcass traits** such as marbling and cutability, or **maternal traits** like ease of calving or milking ability — one or several of Canada's purebred breeds has the genetics to enhance your herd, and your business success.

Ask CBBC to link you to the source of genetic results you seek. Read breed profiles and reach our national Breed Association members, 10,000 Canadian purebred producers, exporters and service providers, via our website.



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The Canadian Beef Breeds Council (CBBC) represents the Canadian purebred cattle industry. Its members include national breed associations that in turn represent producers of breeding stock. Associate CBBC members are exporters and service providers. The Canadian Beef Breeds Council exists to represent & promote Canadian pedigreed beef cattle genetics domestically and internationally. The Canadian Beef Breeds Council is the recognized representative of Canadian seed stock producers by government and industry, while effectively promoting Canada as the source of quality beef cattle genetics.

www.canadianbeefbreeds.com



## A Message from the President of the Canadian Beef Breeds Council

David Bolduc President Canadian Beef Breeds Council

**Welcome to the** fourth issue of *The Power of Canadian Genetics*! We are pleased to participate in this resource guide and provide comments on the quality of Canadian beef cattle genetics. It is our expectation that this publication can assist readers in accessing current information about Canada's genetics industry and also contribute in the advancement of Canada's commercial cattle herd.

Throughout these pages, we invite you to read about the diversity of the Canadian livestock sector, its successes and challenges. We trust that the information contained within this publication will provide you with a reference guide for the Canadian genetic industry, to encourage international awareness and transfer of information.

Canada enjoys an enviable reputation as a source of productive and safe beef cattle genetics—a record unmatched in the world. A number of factors contribute to this high level of success, from a clean environment fostered by careful stewardship and healthy livestock supported by a national animal health and safe food policy, to mandatory identification and provincial programs. Our success is also a result of dedicated professionals, careful record keeping and accurate genetic improvement programs delivered by national breed associations, leading-edge research conducted by leading universities, and corporate entities.

The CBBC and its members are pursuing new partnerships to broaden the scope of genomics—including the analysis of genome function and structure—to enhance our understanding of life, from the cellular level to ecosystem dynamics and to provide a socioeconomic benefit.

We are seeking to showcase a healthy genetics industry with specialized breeding techniques of purebred breeding stock and with ongoing efforts in genetic advancements. The growth and promotion of the purebred sector in foreign markets is a major focus, and we anticipate distribution to members of the Canadian livestock industry as well as international government agencies, buyers, Canadian Embassies, trade shows and world conferences.

Our primary focus is built on four Ps: performance, predictability, profitability and pedigree. Whether you are an importer or producer breeding for performance traits, like birth weight, growth and feed efficiency; or carcass traits, like marbling and cutability; or maternal traits, like ease of calving or milking ability—one or several of Canada's purebred breeds has the genetics to enhance your herd and your business success. We encourage you to contact the Canadian Beef Breeds Council to link you to the source of genetic results that you seek. Our website, www.canadianbeefbreeds.com, includes profiles of each breed and contact information for each breed association and its members (our resource guide can be found in the following pages of this magazine). Our site also includes contact information on exporters and service providers. We are proud of our programs and the strength of our beef cattle genetics and will welcome the opportunity to respond to your questions and provide more information.

For more information about the Canadian Beef Breeds Council, visit our website at www.canadianbeefbreeds.com.

Canada enjoys an enviable reputation as a source of productive and safe beef cattle genetics—a record unmatched in the world.



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# The Canadian Beef Breeds Council:

### CBBC's Vision and Member Benefits

**The Canadian Beef** Breeds Council (CBBC) is a non-profit association that promotes the continual genetic improvement and value of our Registered Beef Cattle. CBBC membership is available to all of the 33 breeds of beef cattle recognized under the Canadian Animal Pedigree Act, which is administered by Agriculture and Agri-Food Canada. Associate membership in the Council is offered to Industry Partners who either work with breed associations to promote registered seedstock or export firms that work to export our cattle and genetics internationally.

The Council does not directly market genetics but exists to introduce interested clients to experts and those who do market genetics. As a promotional arm for its members, the CBBC works to provide factual information on the Canadian Beef Advantage and helps members develop and implement international marketing programs. Within Canada, CBBC maintains a close liaison with the Canadian Cattlemen's Association and with Government agencies such as the Canadian Food Inspection Agency to keep members informed of changing health regulations and other pertinent issues that affect the industry.

The CBBC is governed by an elected Board of Directors chosen by our members and associates. The Board provides policy direction to the Executive Director, who is responsible for providing a unified voice that supports and promotes the value of our purebred registered beef cattle. Canada has a strong and vibrant beef cattle industry, and our seedstock producers are an integral component of that industry. The Council works for its members to encourage genetic improvement and animal health, while representing them to government with a single voice.

There are approximately 10,000 independent breeders of registered beef cattle in Canada. The CBBC is very proud of the divergence and the quality of Canadian beef cattle genetics and welcomes the opportunity we have to promote and market the Canadian Beef Advantage, both domestically and internationally. We will welcome all inquiries and do our utmost to respond to each one and connect you with the most appropriate member or associate. The Council works for its members to encourage genetic improvement and animal health, while representing them to government with a single voice.

For more information: Michael Latimer, Executive Director E-mail: mlatimer@canadianbeefbreeds.com

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# **CBBC Resource Guide**

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To learn more about the Canadian Beef Breeds Council (CBBC) and everything they do, visit their website at www.canadianbeefbreeds.com.



# Genomics in the Canadian Beef Industry

By Kajal Devani, Canadian Angus Association

enomic technology has advanced significantly in the past decade. The Canadian beef industry has embraced many of the tools available to improve livestock genetics and maintain the production of high-quality Canadian beef. The Canadian Angus Association led the purebred industry in the adoption of single nucleotide polymorphism (SNP) technology for parentage verification and for the generation of Genomically Enhanced Expected Progeny Differences (GE-EPDs). Most other Canadian beef breed associations have followed suit.

There are three billion bases in the bovine genome, 99 percent of which are the same in all animals. The differences that do exist, the SNPs, code for the variation seen between individual beef cattle. Canadian beef producers are applying DNA technology to identify those genetic differences in cattle in order to identify, breed and produce animals with the best genetic potential.

### SNP parentage verification

Because of multiplexing technology, parentage verification testing using SNP technology is less expensive than the previously used microsatellite testing. This



Image courtesy of Livestock Gentec, University of Alberta.

reduced cost has led to an increase in adoption of parentage verification testing in the beef industry. The impact of accurate pedigree information on the generation of accurate selection tools and genetic improvement is considerable.

### **GE-EPDs**

Selection tools that predict animals' genetic merit for a wide range of economically relevant traits are generated by almost every Canadian beef breed association, often in conjunction with other associations internationally, as larger volumes of performance and pedigree data result in more accurate assessments of genetic merit. Recently, specific SNP markers have been correlated with variation within these traits. The SNP marker panels can be used to increase the accuracy of selection tools and the Canadian Angus Association, again as a leader in the Canadian purebred industry, is now offering its membership and their customers more accurate predictions of genetic merit with GE-EPDs.



### **Genetic defects**

Recessive genes exist in every species and genomic technology allows Canadian beef breed associations to test animals and identify carriers of deleterious genes. The Canadian purebred sector does this so that commercial producers in Canada, and throughout the world, can buy our genetics with confidence.

# Livestock Gentec project looks at cost/benefit assessment of DNA technology

The Canadian seedstock sector works extensively with Livestock Gentec, an Alberta Innovates Bio Solutions centre based at the University of Alberta. Livestock Gentec is engaged in helping ensure that Alberta (and Canada) are global leaders in profitable and environmentallly-sustainable beef production. Their priorities and goals focus on production efficiency, quality of products, health and food safety, traceability and knowledge translation.

A key project that Livestock Gentec facilitated for the Canadian beef industry is a cost/benefit assessment of DNA technology. The purpose of the project is to answer what is more cost effective—measuring traits, running parentage tests and buying DNA profiles to identify the best breeding cows at a young age, or waiting six years to prove a cow or bull's genetic merit and profitability.

Early results show that selecting bulls with comprehensive traits recorded and augmented with genomics in the form of DNA profiles or SNP parentage has significant value, estimated in this project to range from \$2.47 to \$5.53 per cow mated per year over a base recording system. The gains estimated through this project are cumulative, which means that for the commercial cow-calf producer who consistently selects bulls from well-recorded herds who are focused on genetic improvement, the advantage will be locked in and keep increasing, resulting in tremendous longterm value.

Genomic technology has revolutionized agriculture leading to increased production using fewer resources like land and water. Genomic technology, applied strategically, has the potential to help Canadian beef producers identify and manage their genetics to maximize profitability and the quality of Canadian beef.

Kajal Devani is the Director of Breed Development for the Canadian Angus Association.





# CBBC Resource Guide - Feature Article

# The World Comes to the West: International Programs at Farmfair International and Canadian Western Agribition

ach November, national and international guests gather in Western Canada for two of Canada's premier agriculture showcases, Farmfair International (FFI) in Edmonton from November 3 to 10, and Canadian Western Agribition in Regina, from November 11 to 16. Farmfair International and Canadian Western Agribition (CWA) proudly host these annual events that provide the agriculture industry with a forum for sharing

ideas and conducting business. In 2013, you can expect to see bigger and better international programs that will enhance Western Canada's reputation as a leader in cattle production on the international stage.

The inbound buyer programs at FFI and CWA are designed to provide a venue for buyers and sellers to do business. Through the programs, CWA and FFI coordinate with Canadian breeders and genetics companies to support international buyers in their travel and attendance at the show. These programs offer customized support and access to specialized itineraries including a farm and industry tour day, invitations to special beef-related events and pre and post show tour support.

"One of the great benefits of the International Programs is that they bring together people from all over the world and allows you to spend a lot of time making connections with breeders from many different countries," says Rachael Wheeler, T&R Genetics, Australia. "I look forward to an ongoing relationship with Canadian breeders and buying more genetic material in the future."

With over 5,000 head of livestock showcased, Farmfair International and Canadian Western Agribition provide access to some of the



The Show Ring at Western Canadian Agribition.



The Show Ring at the 2012 edition of Farmfair International.

best that the Canadian agriculture industry has to offer. "The international popularity of these events sets the stage for Western Canada to gain world-wide recognition as an industry leader in agriculture," says Richard L. Andersen, President and CEO of Northlands. "Through collaboration with Canadian Western Agribition, we're building a larger contingent of international buyers, creating commerce and making it more attractive for exhibitors to attend both events. As two of Canada's premier agricultural showcases, Northlands' Farmfair International and Canadian Western Agribition are dedicated to enhancing the future of the agriculture industry for farmers, ranchers and cattle producers alike."

"The international market is extremely competitive. Our events, Farmfair International and Canadian Western Agribition, set us apart from other shows in North America because of our well developed international programs," says Marty Seymour, CEO of Canadian Western Agribition.

"We roll out the red carpet for our international guests. We have the best genetics in the world, and we want international visitors to think 'Canada' when they are looking for beef," says Seymour. "Working together strengthens our international efforts and improves Canada's competitiveness."

The strong working relationship between Farmfair International and Canadian Western Agribition is demonstrated through a signed Memorandum of Understanding (MOU) to collaborate on international marketing and promotional activities to attract international buyers to both shows in 2013.



Richard L. Andersen, President and CEO of Northlands, and Mary Seymour, CEO of Canadian Western Agribition, sign the Memorandum of Understanding between Farmfair International and Western Canadian Agribition.

### Mark your calendars! Farmfair International will be held in Edmonton, Alberta, Canada from November 3-10, 2013. *Visit www.farmfairinternational.com for more information.* Canadian Western Agribition will be held in Regina, Saskatchewan, Canada from November 11-16, 2013. *Visit www.agribition.com for more information.*





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The Canadian Beef Breeds Council, the Canadian Livestock Genetics Association, and the Canadian Swine Exporters Association

# CLGA Resource Guide



A Message from the President of the Canadian Livestock Genetics Association

Brad Sayles President Canadian Livestock Genetics Association

**As president of** the Canadian Livestock Genetics Association (CLGA), I am proud to work with a membership of industry companies dedicated to the improvement of livestock productivity around the globe. As production agriculture strives to meet the needs of a growing global population, Canadian agriculture and, in particular, the livestock genetics sector are well positioned to support continued growth in existing markets and new business development in emerging food-producing nations. Canada's high standards of animal identification, traceability and animal health policy have made Canada a safe and reliable source of efficient, productive animals for farmers the world over.

Our genetic improvement programs assist producers in identifying their superior animals, thereby allowing them to amplify the best genetics in breeding strategies and programs across the country.

The Canadian industry invests millions of dollars each year in researching applied technologies that translate into more efficient, production animals on the farm. Our genetic improvement programs assist producers in identifying their superior animals, thereby allowing them to amplify the best genetics in breeding strategies and programs across the country. These genetics are made available on the global market through a reliable network of export organizations that have decades of experience developing longterm client relationships with producers and governments globally. We want to thank you for the opportunity to become your trusted source of outstanding genetics.



A Message from the Executive Director of the Canadian Livestock Genetics Association

Executive Director Canadian Livestock Genetics Association

**The Canadian Livestock** Genetics Association (CLGA) is proud to be the lead for the high quality genetics that Canada has built a strong reputation for. CLGA's membership is made of the dairy, sheep, goats and poultry genetic sectors. At CLGA, exporters, artificial insemination organizations, embryo companies, breed associations and breed improvement organizations come together to bring Canadian genetics to the world. The focus is on livestock, semen, embryos for dairy, sheep and goats, as well as hatching eggs and day-old chicks.

The CLGA has the mandate to represent its membership at national and international forums on animal health and market access. Working closely with various governmental departments, the CLGA continues to lead the way to make Canada the best choice for healthy seed stock, embryos and semen from health herds and flocks.

...the CLGA continues to lead the way to make Canada the best choice for healthy seed stock, embryos and semen from health herds and flocks.

Canada has long been known for the best foundation stock in the world. This reputation has only been enhanced in recent years by Canada's commitment to traceability, animal health and animal welfare. The members of CLGA take pride in not only providing superior genetics, but also in being a partner with their clients to ensure their success. Our members continually provide international clients with the tools to make the most of their investment by bringing knowledge and training with some of Canada's leading industry experts. All this is combined to make Canada a leading choice for trusted genetics around the world.



Canadian Livestock Genetics Association Association canadienne de l'industrie du bétail et de la génétique

# The Canadian Livestock Genetics Association:

## CLGA's Vision and Member Benefits

### **CLGA Vision**

To maximize global market access for Canadian livestock genetics.

### **CLGA Mission**

CLGA acts of behalf of its members on issues related to market access, market development and animal health through government liaison, fostering industry partnerships and international governmental and non-governmental affiliations.

**For over half a** century, Canada has been a source of high quality, disease-free livestock genetics. CLGA is a not-for-profit trade association (NGO) with a membership composed of livestock exporters, artificial insemination companies, embryo transfer companies, poultry genetics exporters, herdbooks and other companies, agencies and associations that provide support to the genetics industry. Membership includes the dairy, sheep, goat and poultry genetics sectors.

CLGA members work together to continuously improve the livestock genetics industry and focus on providing high quality live animals, semen, embryos, hatching eggs, day-old birds and related products, services and technologies to customers in almost one hundred countries. We recognize the importance of fostering the development of strong technical skills to enhance the management and decision-making capabilities of the client and this provides the client with assurance that imported Canadian genetics will perform to the promised potential. Genetics are important; the effective management of those genetics is critical in terms of profitability. Thus, Canadian exporters can provide the international client with a complete package of value added genetics combined with profit building advice and training provided by recognized industry experts. The credibility and integrity of the programs and systems become the Canada Brand for the genetics export sector.

CLGA builds consensus among and then speaks on behalf of its members on all matters related to animal health (domestic and international) and market access. To enhance the strength of our message in support of member needs, CLGA also participates in broader agri-food industry initiatives and actively develops strategic partnerships.

In addition, CLGA is responsible for maintaining current long-term international marketing strategies for dairy and small ruminant genetics and for securing and administering funds that support market development activities.

In carrying out our mandate, we work very closely with the Canadian Food Inspection Agency, Agriculture and Agri-Food Canada and the Department of Foreign Affairs and International Trade.

With commitment, leadership, passion and vision, Canadian livestock owners will always be improving. The CLGA is ready to work with you.

### For more information:

Michael Hall Executive Director The Canadian Livestock Genetics Association Tel: (519) 821-5200 Fax: (416) 850-8213 E-mail: mhall@clivegen.org Web: www.clivegen.org CLGA members work together to continuously improve the livestock genetics industry and focus on providing high quality live animals, products, services and technologies to customers in almost one hundred countries.



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CLGA membership list continued on page 24



To learn more about the Canadian Livestock Genetics Association (CLGA) and everything they do, visit their website at www.clivegen.org.



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# The Canadian Livestock Genetics Association: Sector Updates

# **Ontario Goat Industry Growing to Meet Market Demands**

By Jennifer Haley, Executive Director, Ontario Goat

he goat industry is a growing and vibrant sector within livestock agriculture in Ontario. With a thriving dairy goat sector and a growing meat goat sector, the industry has been able to respond to growing consumer demand in both domestic and export markets.

Ontario represents almost 52 per cent of Canada's goat population and just over one-third of Canada's goat farms. While there is a thriving smaller scale or hobby sector within the goat industry, Ontario goat producers are commercially focused on the viability, profitability and sustainability of their operations.

The dairy sector is a driving force in the growth of the Ontario goat industry. With just over 33 million litres of goat milk produced in 2012, Ontario's dairy goat farmers and processors are projecting steady and increased growth year-overyear for the foreseeable future. Almost 85 per cent of the milk produced is currently processed into goat cheeses of various varieties, with the remaining being processed for the fluid milk market and other goat dairy products.

The average Ontario goat dairy has 200 milking does. Ontario's focus on superior genetics has helped producers achieve an average milk production of 942 kg (3.5 per cent fat and 3 per cent protein) per doe in a 305-day lactation. In addition, Ontario's dairy goat producers are shifting from seasonal breeding to a more year-round breeding schedule to ensure milk supply will be available for processors on a consistent basis. Popular dairy breeds include Saanen, Alpine, Nubian and LaManchas. Top quality genetics with a focus on production traits have been the focus for breeders.

Ontario Goat, a producer organization dedicated to serving the needs of the goat sector, has implemented a number of programs to help fulfill this mandate.



Photo courtesy of Kendra Keels, Ontario Goat.

"GoGen" is a goat genetic improvement program designed to look at milk recording, classification, registration, breeding strategies and herd health status as important benchmarks that will help producers make sound management decisions.

Ontario Goat continues to support and initiate a number of important research and industry development projects, such as determining the prevalence of Caprine Arthritic Encephalitis in Ontario goat herds and eradication programs; developing protocols for non-surgical embryo transfer; supporting producer education with the development of a goat reproduction manual; developing traceability and management programs for producers; and facilitating research through the Center of Excellence in Goat Research and Innovation.

There are two predominant types of goats raised for meat—Boer and dairy buck kids. The Boer breed was only introduced into Canada in the early 1990s, and has a high yielding carcass and excellent conformation. Dairy buck kids, a by-product of the dairy industry, are raised to lower weights than Boer goats.

Fibre goats, while they are a small niche sector, are perhaps another opportunity for growth for Canadian goat breeders. Angora breeders supply small quantities of Mohair for processing in local mills; there is currently is not a large demand for this natural fibre from the mills.

Ontario Goat, the Canadian Livestock Genetics Association and their industry partners are proud of the accomplishments and growth of the Canadian goat industry and welcome any inquiries regarding the dairy, meat or fibre goat sectors. For more information, please contact Ontario Goat at www.ontariogoat.ca.

Ontario Veal, Ontario Goat and Ontario Rabbit have joined together as partners in the Ontario Livestock Alliance to share staff resources, office space and other organizational infrastructure. Each organization is run independently with separate producer-elected board of directors an each organization still executes its own strategic plan.

# **Primary Breeding in Turkeys**

By Nico Buddiger, Director of R&D at Hybrid Turkeys

eing one of the smaller livestock species doesn't mean that modern breeding technologies are not being applied in turkey breeding programs. Annual turnover, at the parent stock level, is only a fraction of what other

protein sources see. This just means that turkey geneticists have to keep a close eye on developments in breeding technology within other (protein) species (beef cattle, pigs and broilers).

Primary turkey breeding companies have been around since the early 1950s. At this time, hybridization schedules were introduced and specialized lines were developed, making use of the variety of turkey breeds that were available. Through a combination of three or four different genetic lines, a product was created that would meet the demands of the turkey industry (the breeding goal).

In the beginning, the industry mostly consisted of independent hatcheries, growers and processors. Over time, this has evolved to more integrated turkey operations and alignment or take-over of independent hatcheries by the primary breeders.

As a consequence of these industry changes, the breeding goal has gone through some dramatic changes as well. In the early '50s, the focus was on production of poults. Over time, this focus has shifted to low cost, high quality breast meat yield in the processing plant. The increasing importance of animal welfare, food safety and the environment (carbon footprint) are having an impact on turkey genetics, too.

In order to stay competitive, changes to the breeding goal have required changes to the applied breeding technology, including:

- Mass selection has been replaced by pedigree systems (trap-nesting) in order to include family information.
- Testing systems for tracking feed intake in individual cages have been replaced by group housing systems with Radio Frequency Identification technology to capture feed conversion information under the right (commercial) conditions.
- With regards to breast meat yield, early practices focused on correlated responses to body weight. This has shifted to conformation scoring, direct information on yield tests from siblings and yield information on the live turkey through ultrasound technology (see *Figure* 1).

In terms of statistical analysis of available data, traditional selection index methodology was replaced by animal model—Best Linear Unbiased Prediction technology—in the mid-1990s. The advantages of these technologies in turkey breeding are fewer, compared to other species, due to testing in mostly a limited number of wellcontrolled environments, and selection within contemporary groups. Nevertheless, increased accuracies made it feasible to implement animal model methodology in turkey genetics programs.

The next development in turkey breeding programs is the use of single nucleotide polymorphism technology for genomewide marker assisted selection. Although efforts are underway, this technology is not yet available for turkey breeders. Until then, turkey geneticists can only learn from experiences obtained in cattle, pig and other poultry species. As the only primary breeder of turkeys in Canada, it is important to note that Hybrid Turkeys is part of Hendrix Genetics, a multi-species breeding company. This gives Hybrid the opportunity to learn from breeding applications in Hybrid's sister companies in pigs, layers and salmon breeding. 🗯

Hybrid Turkeys is a Hendrix Genetics Company and provides the animal breeding community with superior genetics. Hybrid's head office is located in Ontario. The company has hatcheries and research and production facilities in Canada and France to serve customers worldwide.



Figure 1: Data collection for breast meat yield analysis (left to right: body weight, conformation score, yield test on siblings and ultrasound on breeder candidates).

## **Canada's Sheep Industry: Selecting and Producing Top Quality Animals**

By Stacey White, General Manager, Canadian Sheep Breeders' Association





Romanov.

Texel.

heep have been an integral part of the Canadian agriculture industry for several hundred years and originally provided settlers with a steady supply of wool and meat.

Canada's purebred sheep breeders have always selected and produced top quality animals for as long as sheep have been in Canada. Commercial lamb production has resulted in the selection of breeds with maternal traits, such as prolificacy and mothering ability, to cross with terminal sires, which excel in the production of lamb meat. The introduction of hair sheep has been the result of increased emphasis on meat production and a desire to avoid the need for shearing.

Canada still maintains a number of breeds raised primarily for supplying fleeces to hand spinners and specialty wool producers. In addition, more recently, sheep dairying has become a significant part of the Canadian industry. Consumer demand for high quality, specialty cheeses has stimulated recent growth in this area of sheep production. This dedication to constantly improve and adapt production to a changing international marketplace has resulted in the development of a variety of breeds to produce a range of products.

The Canadian purebred registration system is supervised by the Canadian Sheep Breeders' Association (CSBA) and administered by the Canadian Livestock Records Corporation. The CSBA was incorporated in 1905 and has been maintaining purebred registries ever since. Each registered animal is permanently identified with tattoos or tags.

Four generation pedigrees provide accurate ancestry for each animal, and

random DNA blood testing of every 500<sup>th</sup> animal registered helps ensure the integrity of the registration system.

There are over 40 breeds registered in Canada and the five most commonly registered breeds are the Dorset, Suffolk, Arcott (Rideau), Polypay and Romanov.

A variety of federal and provincial health and food safety programs provide a mechanism for monitoring, control and verification of both individual animals and the national flock. There are also several facilities in Canada that specialize in small ruminant reproductive technologies, such as artificial insemination and semen/embryo collection and freezing.

Genetic evaluation and improvement programs are available to Canadian producers. These programs are important management tools, which offer performance data to both the breeder and the purchaser of Canadian genetics.

As a result of the systems and programs available to Canadian breeders, buyers of Canadian genetics can make their selections with confidence.

The Canadian Sheep Breeders' Association is an organization of over 1,000 breeders of purebred sheep across Canada, representing over 40 breeds of sheep. They are dedicated to working for the interests of sheep breeders across the country, whatever breed they may happen to represent. The members of the board of directors are elected by and represent purebred sheep organizations in each province.



CLGA Resource Guide - Feature Article

# Revised LPI Scale for Canadian Dairy Breeds

By Brian Van Doormaal, Canadian Dairy Network

fter more than 20 years with the Lifetime Profit Index (LPI) as Canada's national genetic selection index, Canadian Dairy Network (CDN) has decided to adjust the scale of expression for all dairy breeds in conjunction with the April 2013 genetic evaluation release.

The CDN Board of Directors took this action following more than a year of consultation with the various breed associations and industry partners. The April 2013 implementation of the revised LPI scale of expression also includes an update of the standard deviation values for fat and protein yields in the formula in addition to the annual genetic base adjustments.

### New LPI scale

Since its beginning in 1991, LPI has helped breeders and A.I. organizations rank bulls, cows and heifers to optimize selection and mating decisions, which translates to high rates of genetic progress for traits of importance. Effective April 2013, the scale for LPI values in each dairy breed will be half of what it has been. In order to maintain the level of LPI for the highest progeny proven bulls, a "constant" will be added to the formula. For the Holstein breed, the "constant" will be 1,700 points, as presented in Table 1, which includes all breeds. This change in scale has no impact on how animals in each breed rank, although reducing the range will create more animals tied at some LPI values.

### Why change the LPI scale?

Table 1 graphically shows the impact



of this change in the scale of expression for LPI in Holsteins. LPI values for progeny proven Holstein sires have exceeded the range from -3,000 to +3,000 points in recent years. This is expected when the scale has an average near zero and the standard deviation is approximately 750 LPI points, since the most extreme values would normally be four standard deviations above and below the average (4 x 750 = 3,000).

This very wide range is unique to Canada and the national selection index in most countries is expressed on a much narrower scale. For example, compared to 750 LPI points in Canada, the standard deviation for TPI in the United States is 235 points and most European countries use a scale with a standard deviation of less than 100 points.

Adding a "constant" in the formula establishes the average value among progeny proven sires.

This concept is similar to the approach

used in the TPI formula for years, which currently includes a constant value of 1,832. The use of 1,700 for Holsteins in April 2013 will translate to a higher "constant" once the genetic base in Canada is adjusted in April 2014, which will allow for a direct comparison of LPI values over time within each breed.

From a producer perspective, there is another major reason why CDN decided to halve the scale of LPI values in each breed, while maintaining the level of the highest progeny proven sires.

Such a change to the LPI scale of expression essentially eliminates negative values, which has been a major concern expressed by breeders regarding LPI values for older cows in their herd that have been very profitable during their lifetime. At the other end of the scale, the new LPI scale will reduce the perceived superiority of genomic young sires compared to progeny proven bulls, as well as the top heifers compared to elite cows.

Table 1: LPI "Constant" by Breed and its Partitioning Across Components							
Breed	LPI Constant	Production		Durability		Health & Fertility	
		%	Constant	%	Constant	%	Constant
Ayrshire	1,700	54	918	31	527	15	255
Brown Swiss	800	54	432	31	248	15	120
Canadienne	900	54	486	31	279	15	135
Guernsey	600	54	324	31	186	15	90
Holstein	1,700	51	867	34	578	15	255
Jersey	900	57	513	33	297	10	90
Milking Shorthorn	1,000	54	540	31	310	15	150

Table 2: Updated Standard Deviations for Production Traits							
Breed	Milk Yield	Fat Yield	Protein Yield	Fat Deviation	<b>Protein Deviation</b>		
Ayrshire	620	25	21	0.21	0.11		
Brown Swiss	500	20	17	0.20	0.12		
Canadienne	450	11	7	0.20	0.13		
Holstein	550	23	15	0.27	0.10		
Jersey	760	34	25	0.38	0.16		
Milking Shorthorn	450	19	11	0.16	0.09		

### Interpretation of LPI

LPI values do not have a specific unit of expression and the main purpose is to rank bulls, cows and heifers according to the genetic selection strategy in each breed. Animals with a higher LPI are expected to produce progeny that will be more profitable over their lifetime, relative to lower ranking animals. This concept of superiority remains unchanged with the new scale of expression for LPI values in Canada.

Based on a CDN study for Holsteins conducted in 2006, every 100 point difference in the average LPI at the herd level translated to an increase of \$50 in profit per cow per year, which accumulates from year to year. With the new LPI scale effective April 2013, this result makes interpretation even easier for Holsteins. Every point increase in the average LPI of a herd now translates to a parallel increase of one dollar profit per cow per year for the lifetime of the daughter.

# Updating production standard deviations

Within the LPI formula, the genetic evaluations for each trait must first be adjusted to a common scale of expression. This is achieved by dividing the evaluations for each trait by the appropriate standard deviation, which makes the evaluations for all traits directly comparable and ensures the desired weight is applied to each trait included in the formula. Over the course of time, CDN geneticists have seen a change in the standard deviation of production proofs within each breed. The rescaling of LPI values in each breed also provides CDN with the opportunity to update the standard deviations for production traits, as presented in *Table 2*.

Other than Milk Yield, the revised standard deviations for these traits affect the LPI formula in each breed.

### Summary

Effective April 2013, the scale for expressing LPI values in each breed is halved compared to the previous range. Top progeny proven sires maintain their LPI level while the highest young genomic bulls and heifers experience some reduction. Older cows with negative LPI values move up, such that essentially all animals in each breed receive positive LPI values. Previous studies relating LPI to profit of daughters remain relevant with the new LPI scale of expression until CDN conducts an updated analysis in the near future.



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The Canadian Beef Breeds Council, the Canadian Livestock Genetics Association, and the Canadian Swine Exporters Association

# Quality Assurance in the Canadian Embryo Transfer Industry to Provide High Quality Embryos

Embryo transfer as an export tool.

By Dr. Brian McOnie

he international movement of livestock genetic material has undergone profound changes over the past 35 years. Historically, live animals were shipped by air, sea, road or rail at considerable expense. In addition to the logistical challenges presented by assembling animals in their country of origin, there were generally post-arrival guarantine

there were generally post-arrival quarantine periods, along with requisite laboratory testing, prior to delivering the animals to their final destination.

The advent of artificial insemination (AI) and the ability to freeze semen meant that livestock breeders were able to access international markets with the genetic material of their elite males. This contributed to the rapid genetic improvement of those herds which adopted AI. However, the genetic and monetary value inherent in elite females could not be fully exploited, other than through the sale of live progeny, or their son's semen, and remained that way until embryo transfer (ET) became widely accessible.

When ET was first commercialized in the late-1970s, progressive livestock producers and marketers quickly recognized the potential of the technology to increase the contribution of elite females to breeding programs around the world. Since then, there have been tremendous strides made in ET practice with increasing efficiencies and decreasing costs. Initially, ET entailed general anesthesia for surgical embryo recovery and transfers which limited much of the activity to specially equipped centres. By contrast, most ET in Canada is now performed on-farm as non-surgical flushes and transfers have become the standard.

Early embryo freezers, freezing procedures, and the post-thaw removal of cryoprotectant agents were effective but time consuming, and therefore limited the number of embryo transfers that could be performed in a day. Modern embryo freezers are compact, highly portable and suited to the mobile laboratories used by many ET practitioners. The adoption of "direct transfer" embryo freezing procedures means that embryos frozen in 0.25mL plastic straws can be thawed, in much the same way as semen for artificial insemination, and transferred into recipient animals without the need for further post-thaw embryo inspection or manipulation. The short to medium term storage of frozen embryos, and ultimately the freight costs of a shipment of embryos, is many times less expensive than would be the case for the number of live animals those embryos represent.

Significant advancements have been made in pharmaceutical products and protocols used to super-stimulate embryo donors and to synchronize recipients, thereby increasing the overall efficiency of ET procedures. While modest increases in the number of embryos recovered per collection are reported over the past 20 years, the interval between collection attempts has been reduced so that more embryos may be collected per donor in a specific time.

Collectively, non-surgical ET procedures, direct transfer protocols, and a greater understanding of techniques involved in manipulating donor and recipient animals, have reduced the cost of ET. When donors are bred naturally, or by AI to proven sires, or where genomic evaluations of the donor and sire are performed, genetic gain can be accelerated making ET an even more attractive proposition.

Beyond the obvious cost of shipping large animals internationally, the movement



Day 7 embryos, intact zona, eligible for export.



Day 8 embryos, hatched from zona, export ineligible.

# CLGA Resource Guide - Feature Article

of live animals presents animal health concerns for the importing country from the standpoint of bio-security and regulatory veterinary medicine. ET allows many of these issues to be circumvented by virtue of the natural biology of the embryo and special processing techniques that have been developed. Embryos routinely collected from cattle and small ruminants at six to eight days post-ovulation are comprised of a mass of cells (blastomeres) encased in an outer complex capsule of sugars and proteins known as the zona pellucida. If it is intact, meaning free of splits or cracks, the zona pellucida helps protect the embryonic cells from infection by bacteria or viruses present in the reproductive tract of the donor.

The recovery of embryos in specially prepared sterile media and careful embryo handling technique offers further protection against potential infection of the embryo. Only embryos with an intact zona are eligible for export from Canada. Post-collection processing by washing embryos through serial dilutions of embryo holding media, along with exposure to the enzyme trypsin, has been proven to remove bacteria and viruses adhering to the zona pellucida. Packaging and sealing these treated embryos in sterile straws offers a level of confidence that disease transmission by the embryo from the donor to the recipient is highly improbable. Many years of study conducted in laboratories of the Canadian Food Inspection Agency (CFIA) and elsewhere have demonstrated the effectiveness of these steps of embryo processing as recommended by the International Embryo Transfer Society (www.iets.org).

Canada has a mature and sophisticated ET industry for beef and dairy cattle, as well as small ruminants. ET has been demonstrated to be a cost-effective, safe and practical means to move livestock genetics internationally. Canada has an enviable global reputation as a source of excellent quality genetic material obtained from healthy donor animals and remains poised for expansion into emerging markets.

Dr. Brian McOnie is a partner at Creekside Animal Clinic Ltd, Vernon, BC. He is the Immediate Past President of CETA/ ACTE and is CETA/ACTE Certified for Small Ruminants.

### The Canadian Embryo Transfer Association (CETA/ACTE)

The Canadian Embryo Transfer Association (CETA/ACTE) is the national body serving and representing the interests of veterinarians engaged in the practice of embryo transfer in Canada.

CETA/ACTE is committed to excellence through its species-specific (bovine, small ruminant, porcine, equine and cervine) ET certification based upon knowledge and technical competence, which is assessed by examination and annual review, as well as mandatory continuing education.

CETA/ACTE certification is necessary for embryo export approval by the CFIA. CETA/ACTE holds an annual scientific convention and provides for the exchange of technical information through 'Tech Talk', an interactive notepad component of the website www.ceta.ca.





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# **CSEA Resource Guide**



# A Message from the President of the Canadian Swine Exporters Association

Albert Eringfeld President Canadian Swine Exporters Association

**On behalf of** the Canadian Swine Exporters Association (CSEA) and the Canadian purebred swine industry, I would like to welcome you to the fourth edition of *The Power of Canadian Genetics*.

The Canadian purebred swine industry is recognized internationally as a leading supplier of purebred swine genetics. A significant and coordinated effort is made annually by the various members of our industry on both genetic improvement as well as new research and development on many of the key issues that affect the profitability of swine production.

Canadian purebred swine genetics are exported to many countries and used by our customers in nucleus, multiplication and commercial herds, as well as artificial insemination centres worldwide. High health, excellent performance, superior meat quality, trouble-free adaptability and outstanding economic value are what you can expect in your herd when choosing a Canadian supplier of purebred swine genetics.

For more than 30 years, the CSEA has helped represent the Canadian purebred swine industry internationally by providing support through various programs and activities related to market access and development for our members, and also through training and support for our customers. We are very proud of the accomplishments our members and our industry have achieved.

We hope you enjoy this year's edition and welcome you to communicate with our members, whose contact information can be found in the following pages of this magazine.

### CSEA: Our Mission is to assist the Canadian swine industry in the promotion and marketing of Canadian swine genetics, worldwide!

The CSEA represents the top exporters from across Canada and is the liason between government and industry to market. We work hard to promote Canadian swine genetics worldwide.

CSEA members supply the finest Canadian swine breeding stock, fresh and frozen semen, as well as technology, training and consultation.

A list of our members, with contact information, can be found in the following pages. Members also exhibit at many trade shows and participate on trade missions globally.

The CSEA also assists with marketing and training programs designed specifically for its members.

Learn more at www.canadianswine.com.

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\* Tester A had never worked

with hogs prior to test

as	Tester	Chasing	LONGARMG	Time Saved
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	D	130 Sec	23 Sec	107 Sec
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### Canadian Swine Exporters Association:

### CSEA's Vision and Member Benefits

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The main objective for every purebred swine producer is to breed profitable animals. The purebred industry has enjoyed successes for many years with exports to over 50 countries. Canadian swine genetics have made, and continue to make, a difference in the profitable breeding business globally and at home. Our success is credited to the dedication of the family farm, the larger multi-site producer alliances, Canadian technology, our high health status, our environmental stewardship, the low density of swine production, superior fast growing genetics with high sow productivity and good carcass quality.

As stated by the late Warren Stein, "Canada has become one of the largest exporters of pork, and it stands to reason that the success is based on the quality of our genetics. To get first-class meat, you must begin with first-rate genetics."

Canadian Swine Exporters Association is a national, notfor-profit, trade association assisting with market access and animal health interests of those involved in the sale, service and promotion of swine genetics both domestically and internationally. CSEA members supply the finest Canadian swine breeding stock, fresh and frozen semen, as well as technology, training and consultation.

Canadian Swine Exporters Association is a high profile respected entity that can keep its finger on the pulse of market access and health issues and speak on behalf of the industry on a daily basis. Together, the members exhibit at international trade show events and coordinate marketing activities and training programs for international clients. From a marketing perspective, the association represents the best genetic suppliers in Canada and are able to promote the quality and value of Canadian purebred genetics internationally.

#### For more information:

Nancy Weicker The Canadian Swine Exporters Association Executive Director 408 Dundas Street, Suite 2, Woodstock, Ontario, N4S 1B9 Tel: (519) 421-0997 Fax: (519) 421-0887 E-mail: csea@rogers.com Web: www.canadianswine.com Canada has become one of the largest exporters of pork, and it stands to reason that the success is based on the quality of our genetics. To get first-class meat, you must begin with first-rate genetics.



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To learn more about the Canadian Swine Exporters Association (CSEA) and everything they do, visit their website at www.canadianswine.com.



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### Write for The Power of Canadian Genetics

Are you interested in contributing to the next issue of this magazine? If you have something that you feel is timely and relevant, and pertains to the members of CBBC, CLGA and CSEA, then submit your idea to ssavory@matrixgroupinc.net. All ideas will be approved by these associations before final copy is requested.

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## Genetics vs. Disease: The Battle of the Giants

By Tim Nelson

ot so many years ago, the title of this short piece might have been Veterinary Medicines vs. Disease: The Battle of the Giants, and not so many years before that, it could easily have been called Livestock vs. Disease: The One Sided Battle.

The one constant is that disease is everpresent in one form or another. Whether infectious or metabolic, we can all rest assured that we can't afford to rest assured when it comes to combating disease.

Farming systems determine how well any animal will perform. Farming systems that expose livestock to disease challenges will, by default, have livestock that perform less well than farming systems that reduce the disease challenges to a minimum, or better still, remove them altogether.

Quite simply, good production practices, good animal husbandry and a clean, healthy environment will always produce a better pig. Regardless of the species involved, you really can't beat good management. But you can always give good management a helping hand.

One would have to have been living under a rock for the last 40 years not to have been completely blown away by the productivity increases that have been achieved through sophisticated genetic selection techniques developed and deployed by geneticists across the globe.

We've now reached a point in genetic selection for productivity (all other pressures being equal and good management being applied) that will pretty much guarantee top performance. And we're now looking for other desirable traits and attributes that we can exploit to make our livestock products even more attractive to the end users.

With all this brilliant breeding, and the right business model, we should be making money from livestock. That is, of course, until we have a shock to the system, such as the Porcine Epidemic Diarrhea Virus (PEDV) currently being experienced in the United States.

Better biosecurity might have stopped this crisis. But biosecurity tends to be, at its best, "hit and miss," and at its worst, can exacerbate problems. Mild cases of PEDV can be controlled using a vaccination strategy; vaccination with killed or attenuated PEDV vaccine has been widely used in China. The current wave of PEDV in the United States is not mild. We need solutions to this kind of problem.

Enter, the emerging giant in the fight against disease: genetics.

PigGen Canada is currently part way through a very large trial looking at how pigs manage against disease challenges they encounter in the environment under different management conditions. The purpose is to look for animals that are more robust; more able to withstand the disease pressures that all animals will face in modern farming systems. By this method, PigGen Canada is hoping to identify specific genotypes that are more robust and select for those types in future breeding programs. This novel research is an important step in identifying and selecting for disease resistance. The size of the trial, the collaboration between the genetics companies through PigGen Canada, and the number of sites in this research will provide significant results for analysis and future selection.

The potential is huge.

In the future, instead of scrambling to develop autogenous vaccines to combat highly pathogenic, rapidly mutating disease organisms or relying on unreliable humans to intervene through appropriate biosecurity measures, we will be producing more robust livestock that can withstand not only the everyday normal farmyard disease challenges, and as a result be more productive, but also livestock that are naturally more resistant to new disease challenges such as PEDV.

The superior health status of Canada's pig herd is the envy of the world and Canada has always been a world leader in livestock genetics. This combination provides a very strong platform from which to drive huge advances in our constant fight against disease.

Will genetic selection prove itself to be the nemesis of the giant that is disease? Not perhaps in the first couple of rounds, but a few rounds into it, the smart money should definitely be on genetics delivering the knockout blow.

Tim Nelson is Executive Director of PigGen Canada, which represents the Canadian swine genetics industry and develops strategies and support for Canadian swine genetics research in concert with the priorities of the Canadian pork industry.



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### CSHB Develops Canadian Industry Strategy on Porcine Epidemic Diarrhea

By the Canadian Swine Health Board



orcine Epidemic Diarrhea Virus (PEDV) was confirmed in the United States in May 2013, the first time ever in North America. It was recognized that the Canadian swine herd was very susceptible to PEDV, as there was no immunity against this virus. This strain of PEDV causes widespread diarrhea, with up to 100 per cent mortality in nursing pigs.

The Canadian Swine Health Board (CSHB) was established to take a leadership role in addressing swine health risks for Canada. As such, CSHB notified the industry immediately of the PEDV threat, and took a collaborative approach in bringing together industry partners to develop a national strategy to address PEDV.

The CSHB issued daily updates to industry stakeholders, including technical bulletins and advisories of the latest developments and providing guidance on appropriate steps to protect the Canadian herd, including reminders of the importance of continued biosecurity vigilance, and, specifically, the threat posed by trucks that are not cleaned and disinfected.

The CSHB's Canadian Swine Health Intelligence Network (CSHIN) provides Canada with a unique opportunity to monitor the health of pigs across the country. Fortunately, CSHIN data continues to indicate that the Canadian herd remains free of any signs of PEDV. The CSHB also developed a national industry strategy for dealing with PEDV, calling for diligence of all swine industry stakeholders. Components of the national PEDV strategy include:

- Heightened biosecurity: Good biosecurity is the key to stopping the spread of this disease, including ensuring that incoming animals are from healthy herds, ensuring that all trucks and equipment are free of contamination, and knowing the quality and source of all incoming feed ingredients.
- Effective surveillance: Besides the important monitoring of herds through CSHIN, effective surveillance includes producers reporting any unusual signs of disease to their veterinarian, and also ensuring their veterinarian is participating in CSHIN.
- Keeping up-to-date: The CSHB provides a free, daily electronic update on swine health news. All industry stakeholders were reminded that they should be receiving this to ensure they have the latest news on PEDV. You can subscribe to CSHB news updates by e-mailing info@ swinehealth.ca.
- Risk analysis: While fundamental initiatives to address this threat were already in progress, a national risk analysis provides key details on further protecting the Canadian herd. Consistently addressing

these factors on a national basis was seen as critical. Ongoing issues included diagnostic testing and capacity, and financial impacts for producers and the rest of the value chain.

Control: It was recognized that an intervention strategy must be established so that a clear plan is in place and immediately implemented in the event of PEDV being found in Canada. Components of this plan include containment to prevent its spread and strategies to eliminate the disease.

Throughout this process, the CSHB continues to work very closely with its industry partners including producers, veterinarians and genetics suppliers, as well as the Canadian Food Inspection Agency. As PEDV is seen as a shared threat to the North American industry, CSHB also remains in close collaboration with pork industry colleagues in the United States.

The CSHB was formed to proactively address swine health challenges through leadership, coordination and support in the management of the health of the Canadian swine herd. Its members include the Canadian Association of Swine Veterinarians, the Veterinary Colleges of Canada, the Canadian Centre for Swine Improvement, the Canadian Meat Council and the Canadian Pork Council.

### News & Views

# **Upcoming Industry Events**

NED

#### CANADIAN SWINE EXPORTERS ASSOCIATION EVENTS

TUE

September 10-12, 2013 Canada's Outdoor Park Woodstock, Ontario Canada's Outdoor Farm Show

#### March 19-21, 2014

Saigon Exhibition and Convention Center Ho Chi Minh City, S.R. of Vietnam Ildex Vietnam

#### May 20-22, 2014 The Jaarbeurs

Utrecht, The Netherlands Viv Europe 2014

#### June 4-6, 2014

Iowa State Fairgrounds Des Moines, Iowa World Pork Expo

#### September 2014 Canada's Outdoor Park Woodstock, Ontario Canada's Outdoor Farm Show

September 23-25, 2014 New China International Exhibition Center Beijing, China Viv China 2014

#### November 11-14, 2014

Messeglände (Hanover Exhibition Center) Hanover, Germany Eurotier

The CSEA and its members also take part in a variety of regional shows in Mexico, Colombia, Ukraine, Korea, the Philippines, Russia and China. Learn more about upcoming industry events by going to www.canadianswine.com!

#### CANADIAN LIVESTOCK GENETICS ASSOCIATION EVENTS

**October 1, 2013** Alliant Energy Center Madison, Wisconsin World Dairy Expo 2013

#### October 4-12, 2013

Guyana International Conference Centre Georgetown, Guyana Caribbean Week of Agriculture 2013

#### November 1, 2013

Pavillion des Pionniers Saint-Hyacinthe, Quebec Expo Internationale Holstein Québec Rouge et Blanc

#### November 1-10, 2013

Exhibition Place Toronto, Ontario Royal Agricultural Winter Fair (Sheep and goat shows)

**November 2, 2013** Pavillion des Pionniers Saint-Hyacinthe, Quebec Expo Internationale Holstein Québec

#### **November 3-4, 2013** Exhibition Place

Toronto, Ontario TD Canadian 4-H Dairy Classic at Royal Agricultural Winter Fair (Showmanship preliminaries, 6:00 p.m. on November 3<sup>rd</sup>; showmanship finals, conformation and group classes, 8:00 a.m. on November 4<sup>th</sup>)

#### November 7, 2013

Exhibition Place Toronto, Ontario National Red & White Holstein Show (9:00 a.m. at Royal Agricultural Winter Fair) November 7-8, 2013 Exhibition Place

1417

Toronto, Ontario National Holstein Show at Royal Agricultural Winter Fair (Junior and intermediate calf classes, 2:00 p.m. on November 7<sup>th</sup>; balance of junior show, milking females and groups, 7:30 a.m. on November 8<sup>th</sup>)

#### February 4-6, 2014

Toronto International Centre Toronto, Ontario Canadian International Farm Show

#### February 5-6, 2014

Stratford Rotary Complex Stratford, Ontario Canadian Dairy Xpo

#### CANADIAN BEEF BREEDS COUNCIL EVENTS

#### September 24-26, 2013

Kuala Lumpur Convention Centre Kuala Lumpur, Malaysia Livestock Asia Expo & Forum 2013

#### October 9-12, 2013

All-Russian Exhibition Centre Moscow, Russia AgroTech Russia: Golden Autumn

#### October 22-23, 2013

Coast Edmonton Plaza Edmonton, Alberta Livestock Gentec 4<sup>th</sup> Annual Conference: Turning Information into Application

#### November 1-10, 2013

Royal Winter Fair Toronto, Ontario

#### November 3-10, 2013

Edmonton EXPO Centre Edmonton, Alberta FarmFair



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For more information about the Canadian Beef Breeds Council, contact Michael Latimer or Doris Rempel at (403) 730-0350 or visit their website at www. canadianbeefbreeds.com.

For more information about the Canadian Livestock Genetics Association, contact Michael Hall at (519) 821-5200 or visit their website at www.clivegen.org.

For more information about the Canadian Swine Exporters Association, contact Nancy Weicker at (519) 421-0997 or visit their website at www.canadianswine.com.





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