

La Revue Holstein Québec

A black and white Holstein cow is grazing in a grassy field. In the background, there are trees with some autumn-colored leaves (yellow and orange) and some bare branches. The scene is captured in a photograph that serves as the background for the magazine cover.

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The true value of milk
It's not just the taste that's good

Ferme Belhorizon
A herd that stands out

Ferme Durantaye
The joys of genetics

BY
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Milk

Good, but not just for the taste

*I*t is entirely possible to drink a glass of milk simply because one enjoys the taste. But there are a number of other reasons that support that choice as well. Numerous research studies and organizations involved with medicine and nutrition indicate that it is in several respects a matter of health.



Cheers! Good health!

Conclusive data

Nutrition and health have been the subject of many research studies. Because uncertainty is the cornerstone of research, all experiments are reviewed by other researchers, who are looking to validate the results. Meta-analyses are then done to review the different studies and establish guidelines or extract conclusive data. Meta-analyses thus compile all the research done on a particular subject with a view to comparing the results and with the hope of drawing a firm conclusion.

When the updated version of Canada's food guide was published early this year, many producers and dairy industry stakeholders broke out in a cold sweat. Yet numerous research studies show that milk and dairy products contribute to good health and, moreover, are difficult to replace. The findings suggest that milk continues to play an important part in healthy eating.

Indeed, Health Canada continues to recommend daily milk consumption. And, fortunately for our fellow citizens, very few people must do without. In fact, based on the figures quoted by Isabelle Neiderer, dietician and Director – Nutrition and Research with Dairy Farmers of Canada, at the Annual General Meeting of Les Producteurs de lait du Québec, it seems that only three per cent of children are allergic to milk protein, a proportion that falls to one per cent among adults, as milk allergies

often disappear by the age of three. Obviously vegans also forego consumption, but they only account for 1.3 per cent of Canadians. Overall, it appears that only two per cent of Canadians are not consuming dairy products. Even among the immigrant population, whether they come from China or India or the Middle East, the majority of immigrants consume dairy products (listen to the conference on the PLQ Facebook page at <https://www.facebook.com/ProdLaitQc/videos/800005080359030/>).

Everyone should be consuming more

In the new Food Guide, milk is now found under protein foods. It is generally accepted that milk proteins are of high quality. In fact, the essential amino acids contained in milk play a number of different roles in the human body; among other uses, they are required to rebuild tissues, such as muscles.



Photos: iStock

Dairy products are essential to the good health of children.

More on research

Dairy Farmers of Canada (DFC) supports various research studies that focus on the dairy industry, including many that touch on nutrition and health. This may lead some to have doubts about the reliability of the results.

And yet DFC has a very clear policy intended to ensure the quality and independence of the research funded by the organization. The policy states firstly that Dairy producers limit itself to funding research, often with others, but does not take part as researchers. Moreover, eight guiding principles direct decision makers with regard to research funding. These principles focus on the study, which "must be designed objectively according to accepted principles of scientific inquiry." A number of principles serve as a framework for the relationship between the organization and the principal investigator, emphasizing among other things that the latter must maintain "control of all aspects of the research and data." It is clearly stated that the principle investigator is the sole person in charge of the research and "should use his/her best effort to obtain publication of the research findings in a timely manner, irrespective of the outcome." All this information is included in a written and signed agreement between the parties (www.dairynutrition.ca/research-funding).



Research on dairy products has the right to the same level of credibility as that on other foods.



Researchers carry out their work with total independence.

But milk is so much more than that, explains Ms. Neiderer. It also contains 15 nutrients, including six of the eight that are often found lacking in the diets of many Canadians. Moreover, children would be the first to benefit from dairy intake. The site www.feedstuffs.com reports that a group of American nutrition and health professionals insists that other than breast milk, children under the age of five should consume only cows' milk and water.

Milk is particularly valuable as a source of calcium, especially since calcium from milk is more easily absorbed than that of other sources. Calcium is important for good bone density, among other things. Indeed, Osteoporosis Canada stresses the importance of calcium, vitamin D and proteins in developing and maintaining good bone health (www.osteoporosis.ca). Among the sources of these nutrients, the organization highlights the benefits of dairy products, which are more readily absorbed.

Likewise, the site www.passeportsante.com (in French) reports that "The authors of a recent study conducted in Quebec concluded that a high calcium intake from dairy products, including milk, was associated with a better plasma lipid profile." (*American Journal of Clinical Nutrition*, 2003, 77, 1448-1452).

Ms. Neiderer also reports that a majority of Canadians – more precisely, 80 per cent of adolescents and women aged 50 and over – are not getting enough calcium, and that proportion is higher today than it was 10 years ago. Calcium deficiency is associated with osteoporosis, a disease that affects one out of three women and one out of five men.

Vitamin D, which is added to milk, is also associated with bone health since it enhances calcium absorption. As reported on the site www.dairynutrition.ca, Statistics Canada, following its Canadian Health Measures Survey (No. 82-624-X in the catalogue) conducted from



SHOWTIME!

Que le spectacle commence!



Blondin Redman Seisme-Red EX-97
Arr.-Grand-mère d'Avatar-Red

Höven Holsteins
AVATAR-RED

ARMY RDC x Special Red Vg 87 (Awesome Red) x Shania Red Ex 92 (Ladd P) x SEISME Red Ex 97 (Redman)

Nouveau Potentiel de show! Issue de la famille Blondin Seisme Red

Conf.	+12	Ang. bassin	5B
Syst. mam.	+12	PTAT	3,00
Croupe	+10	UDC	3,28



Loh Tj Alessia VG-89
Soeur maternelle de Dice Red

Loh
DICE-RED

Diamondback RDC x Aphrodite Red VG 87 (Redburst) x Atlanta RDC Ex 94 (Advent Red)

Potentiel de show! De la famille Advent Atlanta

Conf.	+14	PTAT	3,46
Syst. mam.	+13	UDC	3,23
Puis. lait.	+10		



Galys Vray EX-90
Mère de Grandprix

Mattenhof
GRANDPRIX

Jacoby x Galys Vray Ex 94 (Atwood) x Corse Vray Ex 92 (Damion) x Naples Vray Ex 90 (Leadoff)

Potentiel de Show! De la famille de Galys Vray Championne d'Europe

Conf.	+14	Croupe	+11
Syst. mam.	+11	Ang. bassin	5B
P&M	+11	PTAT	3,42

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2009 to 2011, released, in 2013, the following findings pertaining to Vitamin D:

- “Those who consumed milk once or more per day had a higher average vitamin D level than those who consumed milk less than once per day (68 nmol/L vs. 59 nmol/L);
- A higher proportion of those who consumed milk once or more per day were above the vitamin D cut-off compared to those who had milk less than once per day (75% vs. 60%).”

Research studies and meta-analyses (see box) have also focused on milk fat. Ms. Neiderer stated that of the 20 such studies done between 2010 and 2018, 13 received no dairy industry funding. The point to remember from the meta-analyses is that dairy products may lower the risk of cardiovascular disease. What's more, whole milk may have a beneficial effect in preventing stroke and type 2 diabetes.

The site www.dairyresearch.ca also reports this information, stating that “Researchers at the Population Health Research Institute (Hamilton, Ontario), led by Dr. Andrew Mente, are part of a landmark 21-country multinational cohort study (the PURE study) of individuals aged 35-70 years old. They tracked dietary intakes and consumption of milk, yogurt, and cheese of 138,484 individuals over time. They also tracked mortality and total major cardiovascular events (i.e. major CVD, stroke, myocardial infarction) to assess any

A2 Milk

The most recent edition of Info Holstein (September/October 2019) includes an article on A2 milk, which describes the specificities of this milk. “Milk protein is made up of about 30% beta-casein. There are two different types of beta casein that can be found in milk: A1 and A2. These proteins are almost identical with the exception of one amino acid, but this simple amino acid difference changes how the human body digests the beta casein protein. This difference in digestibility is what has caused the rise in popularity of A2A2 milk (simply called A2 milk). Some researchers believe that people who suffer from a sensitivity to milk proteins (about 25% of the population) would have less of an intolerance to the A2 protein. At this point, more human trials are needed to confirm that this is the case; however, trials in which rodents are used have shown promising results.”

On page 40 of this edition (in French), the Ciq presents information on A2 milk and on the matings that make it possible to modify the genotype of a herd for the purpose of producing A2 milk.

associations between total dairy and specific dairy product consumption with mortality and CVD events. In a scientific paper published in November 2018 in the prestigious journal, The Lancet, the team of researchers found that dairy consumption, especially of regular fat dairy, was associated with a lower risk of mortality and major cardiovascular disease events in a diverse multinational population.”

Likewise, the site www.dairynutrition.ca also reports that studies by the World Cancer Research Fund International show that milk and dairy products could lower the risk of colorectal cancer. Milk may even reduce the risk of breast cancer. Moreover, there is no

evidence suggesting that milk and dairy products might cause prostate, ovarian or bladder cancer.

Finally, the DASH diet (Dietary Approaches to Stopping Hypertension), recommended by the Heart and Stroke Foundation to prevent high blood pressure, includes dairy products. In addition to fruit, vegetables and whole grains, two to three servings of low or no-fat dairy products per day are recommended (www.heartandstroke.ca). ■

Those of us who hope to remain healthy as we age are well advised to include dairy products in our diet.



BY
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The Belhorizon herd A passion passed from generation to generation

*F*ernand Blouin, father of the current owners, launched the herd at Ferme Belhorizon inc. with his wife, Louise Paquet. Now his sons Bruno and Bernard, as well as his grandsons Jérémy and Henri, continue to build on that momentum.

FERME BELHORIZON INC.

Number of animals : 140, including 75 lactating cows

Production : 11 190 kg of milk, with 4.04% fat and 3.36% protein

BCA : 242-262-252

Quota : 85 kg BF/day

Classification : 3 M EX, 3 EX, 24 VG and 40 GP

Crops : 141.6 hectares, 101.1 of which are cultivated, with 18.2 ha devoted to silage corn, 16.2 ha to barley, 54.6 to grassland and 12.1 to pasture for yearling heifers and dry cows.

Maple stand : 4800 taps

Bruno and Bernard recall that their father liked making milk, and so it was no surprise that he should decide in 1968 to specialize in milk production. It was also around that time that he began to take an interest in purebred Holsteins, accordingly acquiring one or two animals each year. Among other memories, the sons remember their annual visits to the Lotbinière Holstein Club auction, which their father enjoyed attending.

Belhorizon Etincelle Talent, EX-91 6E 2*, the first cow bearing the Belhorizon prefix to classify EX, is a descendant of one of Fernand's acquisitions. A granddaughter of *Jolibois Admir Emily*, *Étincelle* is now 13 years old and still in the barn. She is currently in her ninth lactation, with a lifetime production of over 120 000 kg of milk. She is also the dam of 10 daughters, a group that includes 1 EX and 4 VG, and the herd now comprises at least 20 of her descendants. In this family known for its high milk production, the daughters produce an average mature equivalent yield of 12 015 kg of milk, with 4.3 per cent fat and 3.4 per cent protein.

Étincelle's dam, *Belhorizon Express Rudolph*, GP-83 3*, also gave birth to *Belhorizon Evasion Leduc*, a recipient of a Junior Honourable Mention at the Holstein Québec Spring Show in 2002, and shown in Madison as well. *Evasion* was co-owned with Les entreprises J. L. Lafrance et fils.

Another influential family in the herd is that of *Val Bisson Contrast Illustré*, VG-87-3yr. Acquired at the age of six months at the Expo-Poc sale in 2012, *Illustré* is a daughter of the renowned *Val Bisson Goldwyn Maya*, VG-86 37*, granddam of *Doorman* and voted Cow of the Year in Canada in 2015. *Illustré* has earned two Superior Lactation certificates with 4.7% fat and her descendants are clearly following her lead. Her nine daughters enrolled on milk recording have a mature equivalent yield of 12 491 kg, with 4.5% fat and 3.5% protein. With that track record, it is no surprise that *Illustré* became the first cow in the Belhorizon herd to supply embryos to the European market.

As for indexes, *Belhorizon Jumanji Album*, VG-3yr, is known for her LPI of 3045, the highest index in the herd. She recently gave birth to her third calf, and, with PA LPIs of 2996 and 2945, her two daughters are evidently following in her footsteps.

The future of the herd also rests on *Belhorizon Ice Girl Fever*, EX 2E, a cow that has one Superior Lactation certificate and a lifetime production of more than 75 000 kg in five lactations. Her first daughters, including one VG and four BP, are now in milk. Among them, *Belhorizon Ivorie McCutchen*, GP-84-2yr, began her first lactation at the age of 1 year and 11 months and has a projected milk yield of nearly 10 000 kg (258-261-254).

The breeders continue their practice of buying animals with a view to diversifying the herd. Acquired in 2014, *Jolibois Lorna Aftershock*, EX 1*, seems intent on making her mark. A



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Val Bisson Contrast Illustré, VG-87-3yr, a daughter of the renowned *Val Bisson Goldwyn Maya*, VG-86 37*, has two Superior Lactation certificates with 4.7% fat. Considering her track record, it is no surprise that *Illustré* became the first cow in the Belhorizon herd to supply embryos to European buyers.

descendant of the family of *Lindenoord Rudolph Lilac*, EX-96 3E 16*, Cow of the Year in Canada in 2010, *Lorna* has two daughters classified VG, one of which is *Belhorizon Louvre Contrast*, VG-2yr, a cow with a 305-day yield of 10 474 kg (262-297-267) for her first lactation.

An eye to the future

Established in the parish of Saint-Jean, on Île d'Orléans, in 1908, Ferme Belhorizon is now operated by the fourth generation of the Blouin family, brothers Bernard and Bruno. Their parents, Fernand Blouin and Louisette Paquet, began breeding Holsteins in the 1970s.

Today, Bernard's son Henri is also a part of the team. Henri works as an inseminator for the Ciq as well, and laments the fact that as of next January this service will no longer be available to breeders on Île d'Orléans. An employee assists the family with the farm work.

Although both brothers are equally interested in breeding, it is Bruno, a shareholder since 1990, who is mostly in charge of managing the herd and choosing the sires, while Bernard, an owner since 1986, manages the fields.

Confident about the future, these breeders are now planning to modernize their facilities. Focusing on the way ahead, they have good reason to be delighted, as two sons, one from each family, could take over the farm.



Louisette Paquet with her grandson and two sons, from left: Henri, Bernard and Bruno Blouin. Bruno was a director of the Lévis-Bellechasse Holstein Club from 2004 to 2017, and has been president of the Club for the past five years.

Embryos : a path to improvement

As early as the 1980s, embryo transfers contributed significantly to herd improvement. The first animal submitted to the technology was *Filbaie Pacha*, an excellent dairy cow born in 1983. *Pacha* produced 63 598 kg of milk in five lactations and recorded average BCA deviations of +60, +41 and +23.

Nowadays, embryo production serves largely to meet the needs of the herd. Because they value reliability, the breeders select proven cows, two or three per year, for this purpose. The latest cow on the list of donors is *Belhorizon Focus Windbrook*, EX 2E, a descendant of *Pacha* with two VG daughters, which prompted the Blouins' decision to use her.

One of *Étincelle's* daughters, *Belhorizon Eclair Promotion*, has also been used for embryo production. A mating to *Windbrook* generated five daughters, one EX, three VG and one GP-84.

Selection

For brothers Bruno and Bernard Blouin, the primary goal of genetic selection is to constantly improve the distinguishing qualities of their herd, specifically, good feet and legs, excellent fertility and a low somatic cell count.

On the production side, although the breeders don't necessarily have a specific target for milk, they are giving more priority to fat production. For proven sires, a conformation proof of +8, with particular attention paid to feed and legs, is their minimum threshold. For young genomic bulls, because the results are less reliable, the threshold is higher. These bulls are used for 50 per cent of the breeding, because of their popularity with the 10 to 15 buyers who visit the farm every year. Nonetheless, the Blouin brothers still like to make room for proven sires.

A penchant for shows

Taking part in the local show on Île d'Orléans or in Saint-Anselme with the members of the Lévis-Bellechasse Holstein Club is an opportunity for these dairy producers to compare their livestock, but likewise – and perhaps especially – to meet with other breeders to discuss their common passion.

This year, among others, the Blouins exhibited *Jolibois Divine Douglas*, born from an embryo transfer, at the Île d'Orléans show, for a third-place finish in the Junior Heifer class. They also mention *Belhorizon Junkie Doorman*, VG-3yr, second Junior Yearling at the Expo BBQ de Bellechasse in 2015.■

When the Blouin-Paquet couple began breeding Holsteins in the early 70s and chose Belhorizon as their prefix, it was no doubt with a picture like this in mind.

Photo : Michel Dostie



BY
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La Ferme Durantaye An environment where genetics flourish

During his second year in vocational agriculture at the high school in La Pocatière, Jacques Pouliot lived on the Pellerat farm. He recalls that he was greatly influenced there by Thérèse Leclerc, Gervais and Jean-Guy Pelletier's mother, who had a passion for dairy breeding. "She's the one who taught me how to read a pedigree," he says. Later on, he did work placements with Mr. Jacobs and Mr. Biron, two well-known breeders. And that was all it took to kindle a keen interest in the Holstein breed.

FERME DURANTAYE

Number of head : 180, including 84 lactating cows

Production : 10 641 kg of milk, with 4.17% fat and 3.35% protein

BCA : 226-247-243

Quota : 117 kg BF/day

Classification : 14 EX, 40 VG, 36 GP

Crops : 179.2 hectares cultivated to produce grain corn (10.1 ha), silage corn (21.8 ha), alfalfa, brome grass and timothy, 3/4 of which is harvested for silage (91.1 ha), a mixture of wheat, oats and peas (21.4 ha), soybeans (17.8 ha), rye (8.9 ha), and fava beans (8.1 ha).

Maple stand : 3000 taps

Jacques Pouliot's wife, Élise Janssen, the daughter of a Dutch breeder who began farming in 1956 in Cap-Santé, Quebec, where he developed the Janss herd, has always lent him support.

Before he even took over the family farm, in La Durantaye, in the county of Bellechasse, Jacques had already acquired a few registered animals, one of which was *Trois-B SSS Matt Rebecca*, VG 5*, that he purchased in co-ownership with Gilbert Roy, in 1985.

From that line, the breeders give special mention to *Durantaye Goldwyn Mimoka*, EX-94 5E 1* (MS: 97), a representative of the 10th generation of VG or EX cows. *Mimoka* is indeed the darling of the herd, acknowledge Élise and Jacques. She has a Superior Lactation certificate and has produced over 100 000 kg of milk to date. Moreover, she is the dam of eight daughters, all classified GP or better. Now at the age of 12, *Mimoka* will soon give birth to her ninth calf.

Her granddam, *Durantaye Raider Coca*, EX 2E 5*, the first animal bearing the prefix to classify EX, is the dam of eight daughters, all classified GP or better, including *Durantaye Goldwyn Ludvika*, EX 5E, a cow that earned a Superior Lactation and is currently in her

eighth lactation with a lifetime production of 127 805 kg of milk to date. Another descendant of this family, *Durantaye Leduc Marca*, EX-93 3E, first Five-Year-Old in Bellechasse in 2006, also has a Superior Lactation certificate and has produced three daughters, all classified VG.

Embryos used to advantage

The Durantaye herd has also been enriched through the purchase of a number of embryos. Their first experience with Ferme Clovis provided encouraging results. Four embryos from *Clovis Goldwyn Bonelle*, VG-87 2yr 12*, of the family of Daurel, gave the breeders four heifers. The second generation delivered *Durantaye Shotgun Bonam*, EX 2E, a cow that earned a Super 3, with a lactation, at 4 years and 2 months, that yielded 17 621 kg. Her daughter *Durantaye Galapagos Bonemma*, GP-81-2yr, has inherited that trait, with a first lactation, at 1 year and 11 months, projected to yield 11 311 kg, for BCAs of 284-278-278.

In all, the Pouliot-Janssen couple has purchased about 50 embryos from the *Daurel* and *Splendor* families from Ferme Clovis. One of *Daurel's* descendants is *Durantaye Iota Ebeline*, EX 2E, who earned a Superior Lactation certificate. Among the embryos from the *Splendor* family, *Durantaye Fever Sandra*, VG-86-3yr, is also known for her high milk yields, with a Superior Lactation and 57 633 kg of milk in four lactations.

◀ ***Durantaye Goldwyn Mimoka*, EX-94 5E 1*, represents the family's 10th generation of VG or EX cows. *Mimoka* has a Superior Lactation certificate and has produced over 100 000 kg of milk to date. Now 12, she is expecting her ninth calf**

Photo : Michel Dostie



Succession is guaranteed

Jacques Pouliot represents the sixth generation of his family on the farm on Rang 4, in La Durantaye, in the county of Bellechasse, but the operation has been under his direction since the Holstein herd got off the ground. When he took over the reins in 1991, one third of the herd belonged to him and he bought the few purebred animals owned by his father. His father kept the crossbred cows and Jacques paid him for them as they were sold. This made the farm transfer easier by reducing the purchase price. Progress has been steady since then, and in 2012 the owners won the Silver Medal in the *Ordre national du mérite agricole* competition.

The operation is now owned by Jacques Pouliot, his wife, Élise Janssen, and their son Louis. Another son, Julien, will soon join the team as a co-owner, now that he has completed his degree in agronomy. Valérie Deschênes, Louis' partner, is also involved in the operation from time to time. The succession is thus assured, and Jacques and Élise are allowing themselves five years to finalize the transfer.

On a day-to-day basis, Élise Janssen does the milking, sees to the farm's finances and administrative tasks, and manages their maple

business. Jacques supervises all the farm operations in addition to taking care of milking, herd management and maple production, while Louis is in charge of the fields, feeding the herd and maintaining the farm equipment. The farm is also a member of a farm machinery cooperative with seven farms in the area. Now actively involved in the operation, Julien devotes his time to managing the herd. Jacques and Élise have three other children as well: Gabriel, Élisabeth and Emma.



Photo: Courtesy of the Pouliot-Janssen family

Ferme Durantaye is under the care of, from left, Julien Pouliot, Valérie Deschênes and Louis Pouliot, with their son Victor in his arms, Élise Janssen and Jacques Pouliot.

Selection

Ferme Durantaye continues to buy embryos, and their selection criteria now focus primarily on traits for open housing, that is, smaller cows with good feet and legs and excellent udders, and that are more assertive at the feed bunk. According to the breeders, the marketplace today demands animals that are well-adapted to free-stall housing and able to produce high milk yields under those conditions.

On the production side, the breeders choose bulls with a proof of at least 1000 for milk. As for conformation, +10 is considered the minimum. The selection process also focuses on health traits, in particular reproduction and a low somatic cell count. The breeders use A2A2 sires whenever possible, and proven bulls are used for half of these matings.

The home of the Durantaye herd, in the county of Bellechasse. In the foreground, a field of fava beans that is almost ready to harvest.

Embryo production on the farm has been somewhat abandoned now that the herd is uniform in terms of genetics and most of the cows are worth breeding. The rare animals that don't meet the baseline criteria are used as embryo recipients for purchased embryos or are inseminated with Angus bull semen.

High-performance diet

At Ferme Durantaye, the dairy cows are fed a TMR composed of corn silage as well as alfalfa, brome grass and timothy silage, in addition to a mixture of wheat, oats, grain corn, and fava beans. A commercial supplement completes the diet.

Replacement animals are fed both hay and wrapped-bale grass silage. Newborn calves receive milk from the farm, which is pasteurized on site and fed with an automatic milk feeder. Not only is it good for the heifers, says Jacques Pouliot, but it's economical as well, as lower quality milk is used for this

purpose. This way, explains the breeder, they are able to "maintain the high quality standard" for milk shipped to the processing plant, a key concern for these producers. ■



Durantaye Goldwyn Ludvika, EX 5E, currently in her eighth lactation, has a Superior Lactation and a lifetime production to date that stands at 127 805 kg of milk.



Photo: Courtesy of the Pouliot-Janssen family

Two of Mimoka's daughters, Durantaye Windbrook Mika, EX, left, and Durantaye Doorman Amerika, VG-87-3yr, right.



Photo : Michel Dostie