

Fall 2023
Free copy

At a glance

an outlook on dairy production

New
National
Edition



HEALTHY LIFE

focusing on the
transition to lactation



 **trouw nutrition**
a Nutreco company

EDITORIAL



Richard Lizotte Quebec and Atlantic Provinces

In this issue of At A Glance, you will find some aspects aimed at the health of your herd to help you improve the lifetime production of your cows. As you know, margins are getting smaller, and every detail of your daily life can have an impact on your bottom line. That's why we have trained all our advisors to better support you in different phases of your animals' lives to ensure a healthy life, to optimize their lifetime production and the profitability of your business.



Linsday Bridge Manitoba

This issue of At A Glance focuses on our HealthyLife program. This program helps producers increase their lifetime daily yield which is a goal everyone should strive for. HealthyLife was introduced to the market in April 2023, you can read more about it in this edition or ask your sales representative for more information. I hope you find the information informative and useful in your operation.



Calvin Maarhuis British Columbia

We are excited to introduce our new HealthyLife program. As highlighted in this issue, the goal of HealthyLife is to maximize the performance of your transition cows. A successful transition program will help your cows to reach their genetic potential, while minimizing negative health effects. Reach out to your Trouw representative for more information.



Chelsea Gordon Ontario

We are excited to share with you our HealthyLife program. HealthyLife strives to unlock the value of resilience and longevity by managing the transition into lactation. In this issue of At A Glance we dig into the science-based concepts that exist within the HealthyLife platform to support optimal transition, and lifetime production. Transition is such an important phase in the animal's life, connecting to not only her past and future lactation, but also the future of her calf. Our advisors have been trained on these science-based approaches to help support you, to improve animal health, productivity, and profitability.



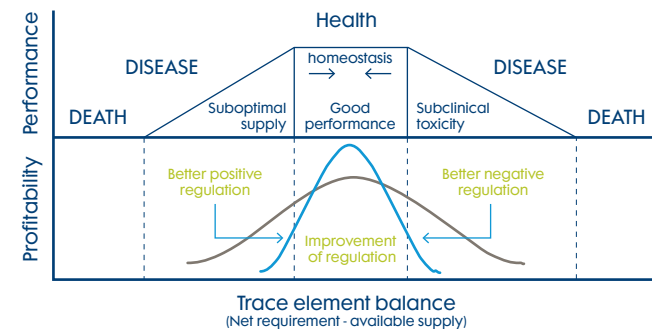
Karl Sikora Alberta

We believe the transition period, as highlighted by HealthyLife, recognizes the benefits to early lactation, cow health, reproduction, production, and profitability. Reach out to your local representative to learn more.

IntelliBond® is the original hydroxy trace mineral that takes mineral nutrition to a higher standard

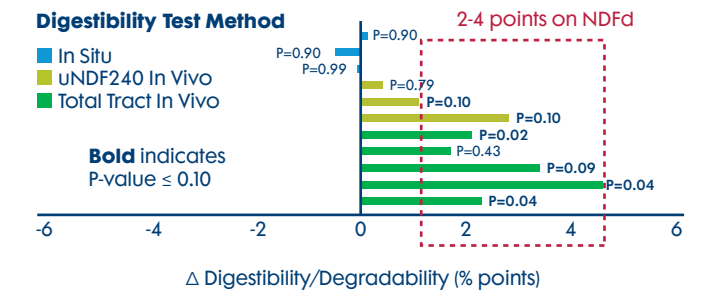
Trace minerals such as zinc (Zn), copper (Cu) and manganese (Mn) are essential to ensure a dairy cows health and productivity and play a pivotal role in the route to more sustainable farming practices.

Studies have indicated that even short periods of insufficient mineral supply can lead to physiological changes that can negatively affect a cow's health. Since mineral requirements of animals are never static and depend on many different factors, it is difficult to ensure sufficient minerals are available (Figure 1). This is especially the case during the transition period, due to reduced feed intake and higher levels of stress, which can lead to systemic inflammation that puts pressure on the immune system.



To meet animals requirements, both the availability of the source of mineral as well as the reactivity, need to be considered. IntelliBond® minerals have a reduced solubility and reactivity due to their unique crystalline structure. Within the feed, this leads to lesser reactivity with other feed

ingredients and prevents formation of insoluble complexes. This means that the minerals provided in the diet remain in the appropriate form, leading to more available minerals and a better opportunity to meet the animal requirements. The reduced solubility and reactivity of IntelliBond® minerals leads to a lesser effect on the rumen microbes, leading to an improved Neutral Detergent Fiber digestibility (NDFd) of 2-4 points, as shown by 15 studies performed by universities and research facilities (Figure 2). Mineral requirements are more likely to be met with IntelliBond®, reducing oxidative stress and inflammation during transition, helping cows reach peak milk quicker. This improves the production efficiency, leading to a reduction of methane emission per kg of milk product, and allows for more output with the same input, benefitting the environment.



The use of IntelliBond® trace minerals supports optimal fibre digestion, improves mineral bioavailability and ensures essential nutrient stability and availability.

IntelliBond® copper, zinc and manganese are included in our dry cow and lactating cow trace mineral packages for all diets to support these critical phases of production.

*References available upon request

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Your comments are always welcome!

Please email us at communicationscanada@trouwnutrition.com



We don't just manage quality; we take it to the next level.

Nutraceutical® is Trouw Nutrition's company-wide proactive program to assure feed-to-food safety and quality. Nutrace® safeguards the safety and quality of Trouw Nutrition products and services. Just as important, it improves operations, profitability and it reduces risks for its customers and their food chain partners.

The Nutrace® program, complying with legislation and customer demands, is structured in five Nutrace® pillars:

- Certified quality
- Ingredient & supplier assessment & management
- Monitoring & control
- Risk management
- Tacking & tracing

Visit our website to find out more about Trouw Nutrition's commitment to quality at www.trouwnutrition.ca.



Curt Bossuyt

Technical Service Support Manager
Trouw Nutrition Canada

What is HealthyLife?

In a rapidly changing agriculture and food industry dairy producers want to achieve full production potential of each animal on the farm while considering animal welfare, the environment, sustainability and economics. To help achieve that Trouw Nutrition has recently launched the HealthyLife platform. HealthyLife is a practical, science-based program that focuses on successful transition to lactation to help dairy producers meet production and operational goals.

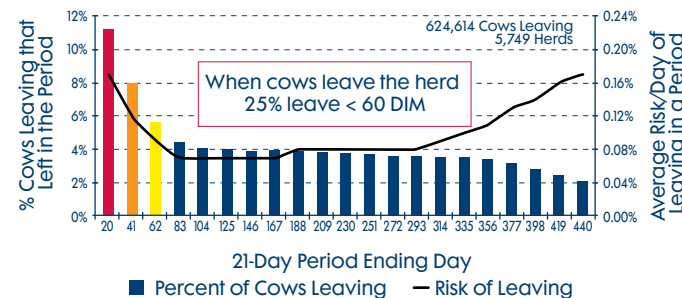
HealthyLife specifically focuses on dry cows and how well they transition into their next lactation. The transition period is a very important part of the lactation cycle that greatly influences milk production, health, fertility, profitability and longevity.

In the transition period, the dairy cow faces several challenges.

- **Diet changes and feeding behavior**
- **Social changes, such as pen moves or psychological stress**
- **Physiological changes** (energy demand, glucose requirements, inflammation)

To achieve farm goals, we need to ensure good management, genetic and nutrition programs are in place, as well as cow comfort, to reduce stress and transition problems. The importance is high, as a negative result will lead to increased metabolic disorders, treatment cost, replacement cost and culling while reducing milk production, reproduction, longevity and profit. As you can see in Figure 1 there are an alarming number of animals that leave the herd in the first 60 days after calving. This represents a significant missed economic opportunity for a producer.

Figure 1 Turnover - culling
Proportion of Cows Leaving the Herd Within a 21-Days Period



When considering turnover rates for less than full lactations, one should remember that the risk of culling is not consistent across all stages of lactation. Cows experience the highest risk shortly after calving; then the risk drops and finally increases again toward the later stages of lactation.

Culling rate is important to the economics of a herd and worth paying attention to. Animals will leave the herd for a variety of reasons as we know: voluntary, involuntary, dairy replacements and mortality. An appropriate culling rate will vary from herd to herd so it is important to understand industry averages and how or why your herd may differ.

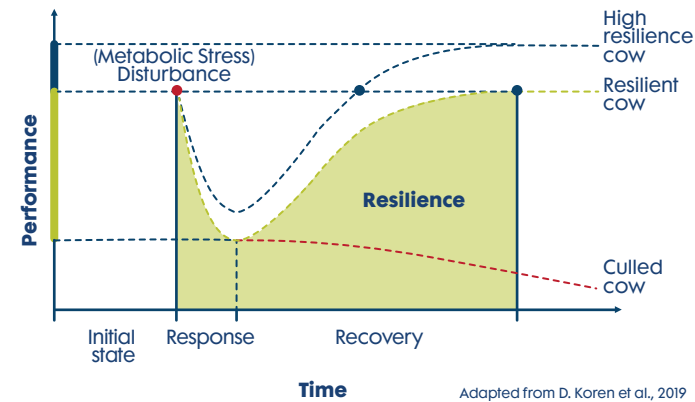
To avoid costly early lactation involuntary culling, cows need to successfully adapt from being dry to calving and the onset of lactation. The HealthyLife program identifies and helps address **3 core physiological adaptations**:

Digestive adaptation	Metabolic adaptation	Immune adaptation
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These adaptations are not independent of each other. If one is affected, the others often are as well. Examples such as stress or inadequate nutrition will affect each of these adaptations. HealthyLife helps address the possible consequences of poor digestive, metabolic and immune adaptations, creating a more resilient cow.

Resilience

In HealthyLife, resilience is described as: “the ability of a cow to deal with the challenges met during transition in such a way that she can express her genetic potential to produce milk”. Resilience helps explain why some cows do well in transition while others do not. Resilient cows can handle stress and changes better than non-resilient cows.



Increasing the amount of resilience in a cow or a herd is advantageous. There are several factors that affect resilience including genetics, stress, management, immune function and nutrition. Highly resilient cows have optimal age at 1st calving, improved reproduction, more lactations, and higher milk production.

Recent research has studied inflammation in dry cows and how that predisposes cows to an increased risk of metabolic disease. The research revealed that cows with inflammation in the dry period had substantially higher risk of developing metabolic disease in early lactation. This does shed some light on why some cows transition better than others under the same conditions. This research is certainly thought provoking and it will be interesting to follow future studies in this area. It does make one think about how to reduce inflammation during the dry cow period, to reduce the risk of metabolic disease after calving.

A sought-after goal for a dairy producer is to increase the amount of milk per day of life for the herd, as this increase's so does profitability. Through Trouw Nutrition's platforms, HealthyLife and the previously launched LifeStart we have introduced the concept of lifetime daily yield. The animal's lifetime daily yield (LDY) is influenced by milk production per lactation, number of lactations, calving interval and age at first calving. LDY tells the full story and is more than milk production alone. It reflects animal management, health, welfare and longevity. Lactanet (2022) reports a lifetime daily yield of 13.95 kg. One of the goals within HealthyLife is to increase that to 15-20kg.

Summary

Trouw Nutrition remains committed to bringing new programs to dairy producers through both the recently launched HealthyLife platform and the LifeStart program. Using the principles from both platforms we support setting animals up for lifetime performance and create successful transitions to lactation.

The levers to influence LDY are the focus of both the dairy LifeStart and HealthyLife platforms.

Figure 3 LDY - The focus of HealthyLife

Age at first calving	Peak Ratio	Days at peak	Heifers culling rate	Early culling rate
Heifers should double birth weight in 8 weeks; reach breeding weight by 13 months	Heifers should peak at 75% of the mature cows	Cows should peak between day 50-70 in milk	Less than 15% at the end of lactation	Less than 5% in the first 100 DIM
LIFESTART SETS LIFE PERFORMANCE	HEALTHYLIFE OPTIMAL TRANSITION, LIFETIME PRODUCTION			

In recent years, dairy producers have become more aware of the number of replacement animals on the farm and costs associated with this. Historically many producers prefer to have a sizable surplus of replacement animals to ensure they have enough. At times this can result in culling cows to make room for heifers. Due to rising costs, many producers have moved in the right direction by trimming heifer surplus to a more economical number. By reducing age at first calving to 22-24 months, 1st lactation milk increases and fewer replacement heifers are needed, further reducing cost.

Improving resilience and adaptation through HealthyLife will increase longevity in the herd. Longevity affects lifetime milk and profit. Producers know the cost of raising replacement animals is substantial with the latest numbers indicating 1.9 lactations are required to pay for a heifer. With a national average of 2.37 lactations of a cow in a herd that leaves 5 months of milk where it is most profitable before the animal leaves the herd. In order to increase the longevity in the herd, it is important to allow healthy productive cows to stay in the herd longer. These cows must meet milk production, fertility, feet/legs and udder health criteria to remain in the herd. The number of replacement heifers must also allow these cows to stay, instead of being forced out to make room for a 1st lactation animal. Each herd will differ, so the challenge is to “right size” your herd.



DETIMDALE HOLSTEINS

> MILLET, ALBERTA

Owners: Tim and Deb Hofstra

Service Centre: Olds, Sherwood Park, Ponoka

Dairy Nutrition Advisor: Dr. Mary Lou Swift

Breed	Holstein and Jersey
Head count	280 Holsteins and 11 Jerseys; 75 beef cows/calves (mostly Angus)
Number of milking cows	85 before fire; currently 125
Average production	Milk: 36 liters Butterfat: 4.3% Protein: 3.2%
Type of milking system used	Robotic



THRIVING THROUGH CHALLENGES

Dairy farmers Tim and Deb Hofstra run Detimdale Holsteins in Millet, Alberta, with their daughter Heidi and son-in-law Arjan. The Hofstra's are committed to producing quality milk and maintaining the Holstein breed improvement program. They believe firmly in looking after their cows' health and comfort, as well as in sustainable production and breeding quality cow families.

Over the years, Detimdale Holsteins has proudly shown in various farming events. Participating in the Alberta Dairy Congress, Northern Alberta Dairy Show, Rollyview 4-H Dairy Club Achievement Day, Provincial 4-H Youth Show and the Western Canadian Classic has garnered the farm with numerous prizes. Their Jersey calves and young heifers make the family proud. Heavily involved in their community, Tim and Deb both hold several roles on industry boards, committees and co-ops in their area.

All this involvement in the dairy world—plus, of course, the countless day-to-day chores and responsibilities of operating the farm, like dairying, haying and silaging certainly adds up, keeping the family very busy. The

Hofstra's nevertheless still manage to carve out precious time with family. Once a year, four generations gather for a long weekend of camping and fishing. The Big Valley Jamboree in Camrose is another highlight in the Hofstra's year, when they take the time together to enjoy a weekend of camping and country music favourites.

Tim Hofstra was introduced to dairy farming through his father, who immigrated to Alberta from the Netherlands in 1954. In July 1978, Tim and his wife Deb began dairy farming themselves, with 39 cows and 10 heifers. By the late '90s, their operation had increased to 82 cows. In 2003, their daughter Heidi and her husband Arjan joined them in the farm's operations, boosting their capacity and again turning dairy farming into a family affair with the next generation becoming involved.

The Hofstra's original tie-stall barn served them well for many years. They worked hard keeping its equipment up to date, regularly checking the electrical and maintaining the highest standards of cleanliness. Nevertheless, tragedy struck in September 2020 when a major fire ripped through the barn, destroying it completely. Thankfully, most of the cows were out in the



field at the time. Matt, Tim and Deb's son who is a trained firefighter, happened to be at the farm that day and managed to get the few remaining cows out of the barn in time, saving them from danger. Of course, the Hofstra's cows still needed shelter and, ultimately, a new barn. The family found a temporary solution in a vacant farm nearby, and they began plans for building a new barn.

The changes that had been forced upon them were a blessing in disguise. The situation gave the Hofstra's a chance to re-evaluate, and after extensive research, they decided to install a robotic milking system robot barn. They worked closely with Dairy Lane Systems (DLS) to find the right solution for Detimdale Holsteins. Robotic milking was a logical choice in many ways. The method enables them to milk cows three times a day, thus maximizing the farm's efficiency and productivity, but it also safeguards the Hofstra's' operations making the farm that much more autonomous in the current context of frequent labour shortages.

With the new build, the Hofstra's also took the opportunity to embrace other features. These included rubber flooring for better cow comfort, waterbeds in the stalls, robotic manure removal and Trioliet feed kitchen with robotic feeding in a six-row perimeter feed layout. With fire safety always at the top of the family's agenda, they also installed a hi-tech alert system for any electrical faults that could pose a fire hazard in future.

During the building process many heifers were born on the farm allowing them to grow the herd from within and they now are milking 125 cows. The Hofstra's are looking forward to the future of the family farm with 3 generations actively involved.

Working with Mary Lou Swift at Trouw Nutrition has proven a very positive experience for the Hofstra's, who cite sound advice and good service as particular benefits.



It is my pleasure and privilege to work with Detimdale Holsteins as their nutritionist. I appreciate their dedication to their animals, as evident by the time spent to ensure their new AMS barn incorporated all the latest technologies for feeding and cow comfort. Their attention to forage quality helps ensure a sound feeding program to support production, reproduction and health.

Dr. Mary Lou Swift, Dairy Nutrition Advisor



FERME JMJ INC.

> SAINTS-ANGES, QUEBEC

Owners: François and Patrick Cloutier

Service Centre: Meunerie Alfred Couture, Quebec

Dairy Nutrition Advisor: Philippe Saint-Onge, P.Ag.

Breed	Holstein
Head count	190
Number of milking cows	85-88
Average production	Milk: 13,931kg Fat: 4.3% Protein: 3.6% BCA: 303-349-347
Type of milking system used	Robot herd deLaval
Herd classification	7 EX, 47 VG, 41 GP, 2 G, 6 NC



COUSINS FIND EASE, FLEXIBILITY, AND PERFORMANCE WITH ROBOTIC DAIRY

Milk production runs in François and Patrick Cloutier's veins. The two cousins are the power duo behind the Ferme JMJ Inc. in Saints-Ange, Quebec. Fifth-generation dairy farmers, the two Cloutiers took over the farm from their fathers in 2018, adding their own chapter to the family's history. Autonomy, increased consistency, and flexibility are some of the benefits of using robots that fuel their love for what they do.

Although swine had been raised on the family farm alongside cattle, François and Patrick decided to focus solely on dairy. The prior generation invested in robots in 2013, making the farm partially robotic and partially tie stall. When the cousins purchased the farm, the decision was quickly made to become 100% robotic. Of the pair, Patrick mainly takes charge of the fields and machinery, while François handles the accounts and herd management, and their fathers continue to chip in from time to time. While concerns about market dependency, rocketing prices and maximizing efficiency are ever-present, the cousins take great pride and joy in their profession.

Under the cousins' leadership, the farm has flourished and so has their herd. In 2022, one of their heifers, Fleur, won the title of "Canadian Champion Milk Producer," shattering records for protein and milk output for a five-year-old. She produced 1,045 kg of protein and 24,392 kg of milk throughout the year, more than double the average for milking cows her age. Fleur's abundant production is a testament to the Cloutiers' attention to detail and commitment to their cows' comfort and well-being.

François credits the key to success for their business is investing 100% in transition cow's management, focusing on comfort, ventilation, space, and bedding. Comfortable packs with plenty of air circulation, a stable diet of at least 75–80% corn silage and automated rations have been key factors in helping Ferme JMJ optimize its production.



In the coming years, François and Patrick want to move all their heifers into free stalls. Currently, dry cows are kept in separate pens while the close-up group are kept together in a large bedded pack. There, they enjoy specially prepared bedding packs for maximum comfort, stress free and without compromise while calving, while two 14-foot diameter fans ensure adequate air circulation. The Cloutier's strategy is very efficient and makes the cows' transition from precalving to milking much smoother. To help with the cows' temperature regulation, the cousins plan to introduce a misting system in the summer.

Ferme JMJ works alongside its nutrition representative, Philippe Saint-Onge to achieve the best possible results from the herd. Philippe's openness to trying new products and tactics has been key in helping the farm sustain healthy production levels. "We are working together to reach common goals, and it makes a big difference." states François.

The cousins' fathers entrusted Shur-Gain with their herd's nutritional needs in 1982 and the farm has been a client ever since.



It is an honor and a great pleasure for us to work as dairy nutrition advisors with Ferme JMJ, as it is a collaborative effort that we undertake together. They are curious, open to ideas, and have confidence in the science provided by Trouw Nutrition to continuously enhance their business. The strategies implemented with the transitioning cows enable them to further improve the profitability of the company by maximizing the longevity of their cows and consequently, their lifetime production. Congratulations to Ferme JMJ, and thank you for your trust!

Lyne Valois, Dairy Development Advisor



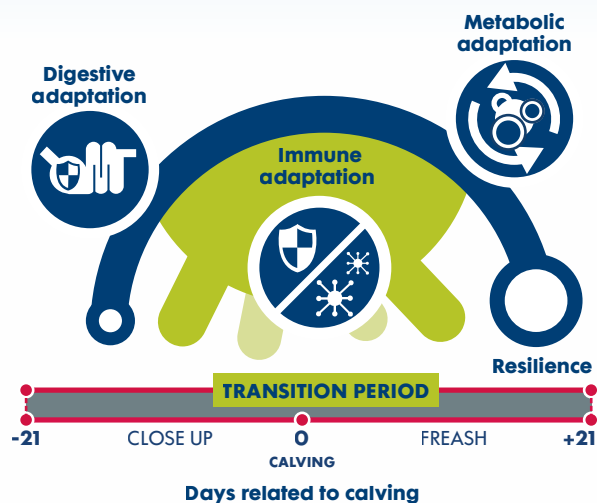
Anne-Marie Raïche, agr.

Technical services development supervisor
Trouw Nutrition Canada

Understanding the 3 physiological adaptations for a successful transition

The challenges faced by dairy cows are enormous, especially during the transition period, as the nutrient requirements for lactation increases substantially and the metabolic needs of the mammary gland take priority at this time.

The transition period is critical on the farm and the cow must undergo three fundamental physiological adaptations: immune, digestive, and metabolic adaptations, which are closely interrelated and dependent on one another.



1 Metabolic adaptation

The demand for nutrients and energy by the mammary gland explodes, leading to complex adaptation processes to prioritize these metabolic needs and meet the demand. When the cow fails to adapt, several metabolic disorders occur, significantly affecting the immune system, reproductive performance, udder health, and animal welfare. It is normal for the cow to have a negative energy balance at the beginning of lactation and mobilize fat reserves. When this mobilization is adequate and well-regulated, the cow successfully metabolizes non-esterified fatty acids into energy. However, there are multiple scenarios which may disrupt the success of this process such as reduced voluntary dry matter intake, dietary imbalance, or poor management of calving-related stress. When these scenarios occur, the cow may fail to adapt, activate the immune system or even trigger systemic inflammation. Inflammation is a necessary immune response to defend against pathogens but comes at a high energy cost for the animal. The immune system requires considerable energy to support its functions, and glucose is its primary fuel source. It then directly competes with other processes such as milk production and reproduction.

2 Digestive Adaptation

The quick transition to a high-energy diet after calving can affect the transit and digestion of nutrients through the gastrointestinal tract. If we do not allow enough time for the cow to adapt to her new diet, it can lead to subclinical ruminal acidosis. Recent data indicates that there may be an equally significant impact on the large intestine. Excessive fermentation in the large intestine lowers the pH and causes changes and damage to the intestinal wall, leading to leaky gut syndrome.

Cows need to adapt to their new diet after calving. By promoting intestinal health in transitioning cows, the immune system will be less stimulated. Cows will have more energy for milk production and will have an easier time reproducing. How can you promote digestive adaptation and intestinal health on the farm? By optimizing dry matter intake and avoiding dietary restrictions. It is also important to minimize sources of stress such as thermal and psychological stress around calving. Both the rumen and the large intestine suffer from nutritional disruptions when unsuitable diets are offered or when calving management is inadequate.

3 Immune adaptation

Digestive and metabolic adaptations influence the immune system. Strategies which reduce the intensity and duration of this immune activation will improve the allocation of energy towards milk production. The cow's ability to maintain calcium balance is an important objective. The relationship between hypocalcaemia and infectious diseases is well-documented. Calcium plays a central role in immune system activation as it is necessary for the proper functioning of white blood cells. Low calcium levels decrease the immune system's ability to defend against pathogens. Hypocalcaemia predisposes cows to various health issues such as metritis, mastitis, abomasal displacement, and ketosis, all of which have an impact on milk production and fertility.

These three key adaptations will influence the resilience of your cows during the transition period and lead to improved milk production and greater longevity.

Measuring your cow's body condition score is key! See our interactive tool online.



Scan me!



SUNNYDENE FARMS LIMITED

> BURGESSVILLE, ONTARIO

Owners: Ruth Ann, Scott and Elizabeth Buckrell

Service Centre: Norwich Feeds

Dairy Nutrition Advisor: Rick Verhoef and Amanda Davison

Breed	Holstein
Head count	229
Number of milking cows	112
Average production	Milk: 37L Butterfat: 4.25% Protein: 3.31%
Type of milking system used	Parlour



EMBRACING CHANGE & GROWING FOR THE FUTURE

Ruth Ann, Scott and Elizabeth Buckrell of Sunnydene Farms Ltd. operate a 400-acre farm with a herd of 229 Holsteins and 112 milking cows. As the farm continues to evolve, the Buckrells care and love for their herd is demonstrated through their exceptional pregnancy rates, growth capabilities and overall herd health.

The property was bought by Scott's grandfather, Philip Buckrell, in 1947, and dairy soon became the farm's focus, with chickens and pigs giving way to more dairy cows. Scott's father, LeRoy quit school at the age of 16 to work on the farm to support his father who was experiencing increasing health concerns. In 1995, Scott officially joined the family farm after graduating from the University of Guelph with a degree in agriculture. Now boasting four generations of active farmers, the family has uninterruptedly cared for the farm's fields and animals for almost 80 years.

Originally a 100-acre farm, the property has expanded over the years. It first provided milk to a local cheese factory, but switched to milk quota after its introduction in the late 1960s. During the 1970s, the Buckrells built a feed storage silo and added a pipeline and bulk tank to replace the milk cans that were no longer allowed under quota rules. LeRoy also purchased additional quota from two farms who refused to switch to bulk tanks, expanding Sunnydene's production even further. Additional tie stalls and pack pens were built, and a motorized feed cart was installed. In the 1980s, a new drive shed and milk house went up to provide

space for a bigger cooler, a new office, and the old two-storey barn was converted into a single-storey barn that allowed for better ventilation and the addition of a smart feeder system.

Ever since then, Sunnydene has continued to grow, with several buildings being added or retrofitted to suit the needs of the growing operation. Automated systems were installed, and production increased. Since 2020, the farm has purchased additional quota whenever available, with the goal of continuously expanding its capacity. The farm now owns 400 acres and rents an additional 140 acres to meet their needs. The farm's current pregnancy rate sits at 35%, with a single-ovulation synchronization program, and a 72% heat detection rate on the milking herd. It was always Scott's dream to raise his five children on the family farm, and he never considered pursuing any other career. He strongly believes that farming is not only a job, but a lifestyle, and he is very proud that the family provides all of Sunnydene's labour and animal care itself. Scott, along



with this two youngest sons, Jacob and Noah share the chores and the three-day milking rotation. They are all very interested in both the dairy and crop aspects of the farm, and they hope to do more of their own cropping and fieldwork in years to come. Keen to have additional family members involved in the farm, the Buckrells are looking ahead to identify areas for improvement and believe that prioritizing growth is crucial for enhancing animal care and productivity.

For Sunnydene, quickly adapting to recommendations has been key to managing the cows' transition to milking. In fact, the Buckrells employ plenty of effort to keep changes to a minimum for both fresh and dry cows. By providing the herd with a low-stress, calm facility, the farm has indeed improved its lifetime daily yield.

Cows transitioning to lactation are currently kept in the pack pen throughout their entire 45-day dry period. After calving, the cows are moved to the fresh cow pack for about a week or two, depending on the space available in the parlour. Dry cows are fed fresh total mixed rations (TMR) twice a day, while fresh cows receive specially formulated TMR twice a day. Two boluses of calcium are given at calving to assist older cows, and Rumensin boluses are dispensed if necessary. Dry cows' and close-up heifers' feet are also kept trimmed.



By consistently providing quality feed to keep cows healthy and happy, Sunnydene Farms ensures its operations are sustainable and will provide for the future generations to come. Sunnydene Farms also relies on Trouw Nutrition's advisor, Rick Verhoef, who completes a monthly service plan to monitor and review on farm trends. Trouw Nutrition's Amanda Davison provides rations and nutrition related recommendations. Scott credits them with providing insights on long-term trends that would have otherwise gone unnoticed in the farm's daily routine. Rick and Amanda are in tune with the farm's happenings, Scott and his family's farming goals, and always looking to improve animal health and productivity.



It is a joy to work with Sunnydene farms where animal health and care are prioritized, resulting in a profitable operation. They are always striving to meet their goals and have a high level of respect for everything they do. The respect they give their animals results in exceptional care. The respect between generations makes for a cohesive working environment on the farm, and the respect and trust they have with their external teams allows them to reach their goals. They do a lot of little things right, which all come together for some really great results. We are happy to be part of their team and work alongside them as they reach their goals

Rick Verhoef and Amanda Davison, Dairy Nutrition Advisors



DOCK ROAD DAIRY FARM

> ALBERTON, PRINCE EDWARD ISLAND

Owners: Kent and Diane Rennie

Service Centre: Trouw Nutrition Moncton, NB

Dairy Nutrition Advisor: Carrie Bernard

Breed	Holstein
Head count	89 (164 total head count)
Number of milking cows	75
Average production	Milk: 13,200 kg Butterfat: 4.40% (Jan 2023-June 2023) Protein: 3.29% (Jan 2023-June 2023)
Type of milking system used	BouMatic AMS
Herd classification	1 EX-4E, 1 EX-2E, 19 VG, 47 GP, 7 G



MILKED TO SUCCESS CULTIVATING RESILIENCE ON PRINCE EDWARD ISLAND

Dock Road Dairy farm is an innovative 300-acre property utilizing BouMatic robot technology to milk 75 cows. The farm is owned by Kent and Diane Rennie who are passionate dairy producers on the Northwest side of beautiful Prince Edward Island. The farm exemplifies the benefits of focusing on animal health with detail, being open and transparent producers and adapting as the industry grows.

The property was purchased in 1962 by Kent's parents, Fred and Eva. Mr. Rennie who started operations with a mixed farming approach, including milk cows, hogs, and potatoes, but decided to convert into an all-dairy production in 1973. Kent returned to the family farm in 1988 after graduating from Nova Scotia Agricultural College. The same year, Kent started working as a milk tester for the Agricultural Dairy Laboratory and Inspection Committee (ADLIC), in addition to his work on the farm. Over the next decade, Kent and Fred continued making improvements to the farm and adding quota whenever possible. It was incorporated as Dock Road Dairy Farm Ltd. in 1998.

In 2000, Kent left ADLIC so he could devote himself full-time to Dock Road Dairy. Fred was semi-retired, and Kent took over management and leadership duties with support from herdsman Jimmy McAssey who has worked at the farm for over 30 years. Unfortunately, in November 2013 a devastating fire destroyed the dairy and heifer barns and killed most of the livestock. Over

the following 17 months, a new sand-based free-stall barn with tunnel ventilation and a heifer and dry cow barn were constructed.

Kent and Diane are now joined by their son Sydney, a recent business management graduate from Holland College. Sydney credits his childhood on the farm for his interest in farming and he embraces the industry's highs and lows equally, tackling challenges head on as they arise. In addition to working off the farm, their other son Jake still helps out when needed.

At Dock Road Dairy Farm, cows transitioning to lactation are separated into far-off and close-up groups. In addition to regular total mixed rations (TMR), the close-up group is fed transition feed with straw added to the forage, a strategy which has yielded positive results and increased overall herd



performance. Additional improvements are being considered, including an even greater focus on hoof health, a key factor in overall cow comfort and performance. Through a rigorous hoof care and monitoring program, Dock Road Dairy hopes to minimize issues and optimize milk production. The Rennies also invest considerable energy into providing their herd with a well-balanced diet. They work closely with Carrie Bernard, the farm's nutritionist, to make sure their cows get the appropriate blend of nutrients and feed ingredients. Having grown up on a farm, Carrie relies on a lifetime of knowledge and expertise to help Dock Road Dairy achieve its production goals. In fact, since the early 1960s, Trouw Nutrition has now provided two generations of Rennies with consistent, quality and knowledgeable service and, in doing so, has been a key partner in the sustained success of Dock Road Dairy Farm.

Kent and Diane enjoy learning from other farmers and industry professionals. Over the years, they have received countless visitors to share insight and promote the dairy industry. They have fought hard to ensure the sustainability of their dairy farm and value good production levels as much as their cows' health and well-being. Increasing demand for dairy products is, in their opinion, an encouraging sign for the industry's future, a future that they want to help create for the benefit of the generations to come.



I have worked with the Rennie's and their herdsman Jimmy since I started with Trouw Nutrition in 2016. It has been an absolute pleasure working with them and helping them meet their goals. Kent is very open minded and passionate about what he does, and it shows. I look forward to our continued partnership.

Carrie Bernard, Dairy Nutrition Advisor



Andrée Bourgeois
Technical Services Manager
Trouw Nutrition Canada



Pedro Nogueira
Dairy Technical Support
Trouw Nutrition Canada

Sustainability

Feeding the Future is Trouw Nutrition's purpose. It gives us inspiration and makes us proud to help solve one of humanity's biggest challenges: sustainably feeding the world's ever-growing population. Given our purpose, sustainability sits at the heart of our company's strategy and agenda. Trouw Nutrition has long worked to build a more sustainable food system.

HealthyLife concepts are important for the future success of a sustainable dairy industry. HealthyLife focuses on managing the transition into lactation, and with that we have the ability to improve lifetime daily yield (LDY) performance. LDY is a measure of the entire milk production for each day of the cow's life. This leads to profitable dairy producers, continued focus on environmental sustainability, as well as keeping the priorities on animal health & welfare and consumer trust.

HealthyLife concepts attempt to unlock the value of resilience and longevity by managing the transition to lactation. This has many benefits, including:

- **Increase milk production** per lactation
- **Increase number of lactations** per cow
- **Reduce involuntary culling rate** and early culling

How can we measure sustainable lifetime production?

Normally the dairy industry uses **4 benchmarks** to measure success in dairy herds:

- **Daily average:** Total milk of the day / # of milking cows
- **Lactation production:** kg of milk in 305 days
- **Lifetime production:** kg of milk from 1st lactation until the last lactation
- **Milk solids:** Total kg milk solids produced during the cows life

Although these benchmarks are useful and good metrics, they don't tell the whole story in terms of management and longevity, and they are not very good indicators of the sustainability of the herd. LDY on the other hand, connects and finds links among the various stages of production that have been traditionally measured in isolation. LDY is the metric telling the full story.

More than milk, it reflects:

- Animal management
- Health & welfare
- Longevity



What does sustainability mean?

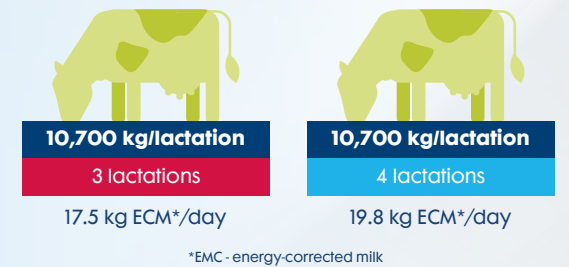
The "classical" definition of sustainability puts emissions (greenhouse gasses, nitrogen, phosphate) and usage of scarce materials in the centre, but the social definition includes **3 pillars**. They are:

- **Reduction of environmental footprint:** did you know that reducing age at first calving from 26 to 24 months could decrease by 3% the methane per litre of milk produced?
- **Animal health and welfare:** did you know that reducing culling by 5% could decrease methane/litre of milk produced by 12%?
- **Financial performance:** farming can't be sustainable if the farmer and future generations of farmers can't earn an income.



Sustainability can be improved by increasing lifetime performance. Lifetime production is greatly impacted by longevity.

The following image helps explain this idea.



LDY is a performance metric of sustainable dairy production, encompassing health, productivity, efficiency, and profitability. The ultimate goal is to improve LDY and the objective is to achieve 15-20 kg/day of life target. LDY is influenced by **Age at first calving • Production per lactation • Number of lactations**

Let's check an example of how age at first calving impacts on farm:

Age at 1 st calving	26 months	24 months	24 months	22 months
Days of life	2,048	1,987	2,497	2,436
Days milking	1,255	1,255	1,765	1,765
LDY	14.4 kg/day of life	16.01 kg/day of life	20.6 kg/day of life An extra 1.3 years	21.7 kg/day of life
Profit	\$7,596	-	-	\$16,610

HealthyLife advocates for a multidisciplinary approach to understand and manage adaptation to a new lactation, aiming at an improvement of cow welfare and longevity. Appropriate management of dairy cows in the peripartum period can ease adaptation and facilitate cows to adjust to a new lactation by applying the right nutritional and management strategies.

Dairy farming will play a key role in feeding the world's population in the coming decades. This role will have to be brought about in an increasingly sustainable way, which presents many challenges for a dairy farmer. To meet these challenges, it is important to take care of the animals on the farm, from birth to removal, as efficiently as possible, resulting in a higher lifetime daily yield.



FRIECREST HOLSTEINS FARM

> KLEEFELD, MANITOBA

Owners: Ed and Kathy Friesen

Service Centre: Otterburne, MB

Dairy Nutrition Advisor: Curt Bossuyt

Breed	Holstein
Head count	180
Number of milking cows	88
Average production	Milk: 14,300 kg Butterfat: 4.45% Protein: 3.07%
Type of milking system used	Tie stall
Herd classification	1 EX, 31 VG, 41 GP, 5 G, 17 NC



A DAIRY DREAM COME TRUE

Friecrest Holsteins is the property of first-generation farmers and owners Ed and Kathy Friesen and their four daughters Alyssa, Loralie, Janelle and Jocelyn. With 180 Holstein cows, 88 milking cows and a total of 220 acres, the Friecrest's is a story of love, labour and success.

Keen to raise their family on a farm and make their dream of being dairy farmers come to life, Ed and Kathy purchased the then vacant dairy farm in the spring of 1999 and immediately got to work restoring it. With a now-grown family and 24 years of successful operations under their belt, the couple's hard work and passion have clearly paid off.

Ed and Kathy manage their cows transitioning to lactation by splitting them into two groups of cows: close-up and far-off. The dry cows are fed a balance total mixed ration (TMR) with a top dress fed to close-up cows that supplies appropriate nutrition. Protocols and strategies are in place for preventive health measures and monitoring for potential issues. Dry cows are housed on a bedding pack that is clean and dry with plenty of space and ventilation. The farm has been feeding a dry cow TMR for many years and has evolved over time. Based on new research and updated dry cow program a change was made in 2020, which greatly smoothed the cows' transition process and eliminated a few pesky issues. As a direct consequence, their cows now peak higher, are more resilient and produce optimal results for the dairy operation.

For the Friesens, every day on the farm brings a renewed sense of purpose. They get to witness firsthand their cows' growth and development, rejoice at a successful milking, and see their hard work bear fruit. But the job obviously brings its share of challenges too, including harsh and unpredictable winter weather, which can cause production delays and undue stress on the animals as cold temperatures creep into the dry cow barn. Still, Ed and Kathy could not see themselves doing anything else. Dairy farming is—and has always been—their dream job. They are most proud of having turned a vacant property into a productive, innovative dairy farm that integrates new techniques and tools to enhance its herd's performance.

Ed and Kathy are always open to improving on their methods. They regularly review their processes and implement new techniques to continually increase production. These days, they are working towards consistently producing 2 kg of fat per cow per day. A marked improvement from their 1999 goal of 1 kg per cow per day!



The Friesens firmly believe that the key to increasing their herd's lifetime daily yield is through strict calf raising protocols from birth, combined with heifer, dry cow and lactation feeding programs. All combined with a steady focus on the animals' health and comfort. With such a strong foundation, their cows are healthier and can enter the herd early to become productive animals.

For almost 25 years, the Friesens have counted on the knowledge of their nutritionist and now friend, Curt Bossuyt. At his guidance, in fall 2020, they reviewed every area of their farm management, from calf care and heifer raising to the dry cow program and feed management. They then decided to milk their herd three times a day, a move that resulted in large gains for the farm over a short period of time.

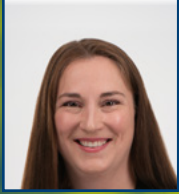


For Ed and Kathy, success comes through sustainable production. From crop rotation to enhanced genetics and improved feed efficiency, opportunities for gains in production are plentiful. And with Curt's help, they are confidently forging a path ahead, testing new techniques and products and relying on a lifetime of experience to guide them along the way. Even after 25 years of operations, one thing is certain: Friecrest Farm's future looks bright!



I have been fortunate to work with Ed and Kathy since they started their own dairy farm at Friecrest Holsteins. The farm is very well kept and has progressed over the years with the adoption of new concepts, technology, and programs. I enjoy working with Ed and Kathy and thank them for the support as their nutrition consultant.

Curt Bossuyt, Dairy Nutrition Advisor



Chelsea Gordon
Ruminant Business Manager
Trouw Nutrition Canada

How can HealthyLife help profitability

Often, a focus on profitability appears to make people feel that 'you are only in it for the money,' but the fact is that if a business is not profitable, it will quite simply not remain in business. This is true with a farm business, which is why this is one of the three pillars that Trouw Nutrition considers in our sustainability platform.

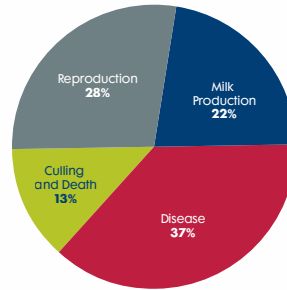
With Canada's quota system, to become more profitable, efforts must focus on reducing expenses to increase overall profitability.

The transition period can be a challenging time in the dairy cows' (and producer's) life. Considering the cost associated with preventative treatments, the time and treatment costs of any subclinical or clinical diseases, the lost revenue in milk production, and the risk of involuntary culling, managing the transition into lactation can have a significant impact on farm profitability.

Clinical disease incidence within the first few weeks of calving has long-term effects on lactation performance, reproduction, and survivability within a herd. In a large retrospective study looking at over 5,000 individual cow records at a single US herd, Carvalho et al., 2019 found that animals who had a clinical disease within the first 21 days in milk produced 410 kg less milk, 17 kg less fat, and 12 kg less protein compared to those who did not. They also had lower pregnancy rates, increased pregnancy loss, and increased culling rates. These animals also peaked much lower than their healthy counterparts. For each 1 kg increase in peak milk yield, we typically expect 200 L more milk over the lactation. This partly explains the loss in milk production for those animals who experience early lactation clinical disease.

Putting this into financial terms, 410 kg less milk at \$0.80/L results in \$328 for just lost milk. When we also consider the cost of culling, the rearing cost for a replacement animal, and the reproduction costs for those animals who have remained in the herd.

Estimates for early culling costs are \$1,600 CDN (Devries, 2021). These costs include culling and clinical disease. Subclinical disease incidence rates are much higher on a typical farm and are often related. Though association does not mean it is the cause of this other disease, usually, risk factors for one metabolic disease are shared across multiple diseases. This results in an association of an individual risk factor to numerous different metabolic outcomes. A study by the University of Guelph (Gohary et al., 2016) estimated subclinical ketosis costs your farm \$203 per case, compared to \$430 CDN for a clinical case. Gohary also provided a great visual representation of where those costs came from, with loss of milk production only accounting for 22% of the actual costs. 28% of this cost was related to reproduction, 13% to culling, and 37% was associated with subclinical ketosis and an increased risk of another disease.



To measure the success of any changes on the farm, peak milk is an excellent metric that can indicate any subclinical issues which may be occurring. Peaking at appropriate days in milk (50-70 DIM for mature animals, with heifers ~20 days later) should help maximize peak milk production and milk persistency after the peak. General rule guidelines on the impact of peak milk are that every 1 L increase in peak milk translates to 200 L of milk within the lactation. So this is a critical performance indicator from a financial impact as well. The milk price of \$0.80/L translates into \$160 per cow for each 1 L decrease in peak

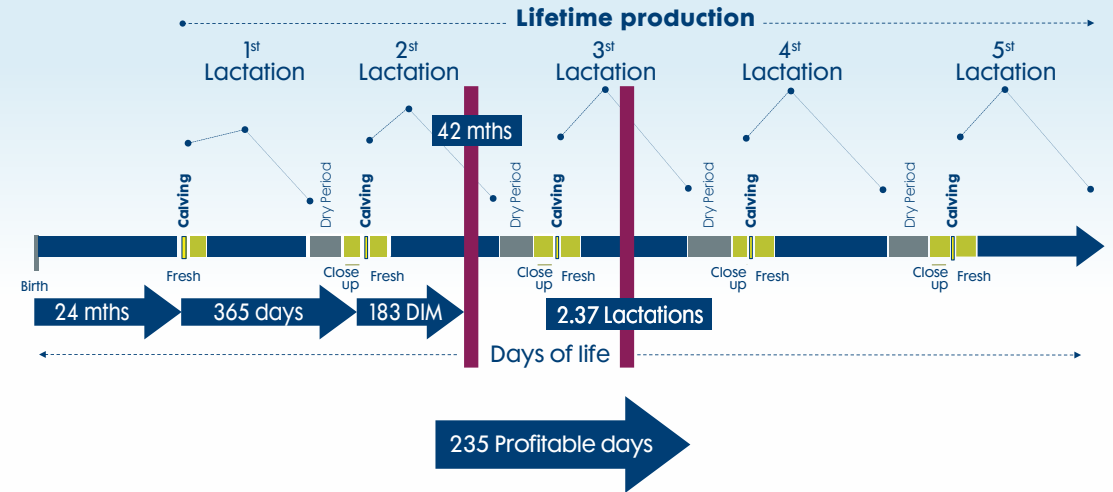


Days at peak
Cows should peak between day 50-70 in milk



Peak Ratio
Heifers should peak at 75% of the mature cows

$$\text{Lifetime Daily Yield} = \frac{\text{Lifetime production (kg of milk)}}{\text{Total days of life (d)}} = \text{kg of milk /d of life}$$



milk yield. Additionally, reviewing the ratio of peak milk between mature cows to heifers can help evaluate if there is a challenge occurring with replacement animals or mature animals to drill down in identifying bottlenecks on farm.

Reducing involuntary culling and ensuring heifers are grown effectively to achieve productive milk production at the optimum age at first calving are vital factors that will also influence the animal inventory needed on the farm. An increase in culling, or an older age at first calving, means that more replacement heifers will be required to maintain the herd. This can be quite costly as the cost to raise a heifer is approximately \$3,500. Additionally, filling quota with fewer animals can support reducing the replacement animals needed and reducing overall herd size.

Number of replacement heifer required for 100 dairy cows

Turnover Rate (%)	Age at First Calving (months)				
	22	24	26	28	30
20	40	44	48	51	55
25	50	55	60	65	69
30	61	66	72	77	83
35	71	77	83	88	93
40	82	88	94	100	106
45	90	97	102	107	112

Though there is a balance between increased revenue for high production and increased costs that need to be considered, it has been demonstrated via multiple routes that managing the herd towards fewer cows to fill a quota, and therefore increasing milk production per lactation increases profitability.

A key performance indicator HealthyLife uses to measure success is reducing early culling. HealthyLife's goal is to minimize culling in the first 100 DIM from the current Canadian average of ~35% to less than 5%. Assuming an average overall herd turnover of 35%, reducing the number of animals leaving within the first 100 DIM for a 100-cow dairy would go from 12 animals per year to only 2. With heifers, the goal is to keep animals that you have taken so much time, care, and money to raise in the herd long enough to know if they are superior producers. By reducing involuntary culling, keeping profitable animals in the herd for longer should increase the herds' longevity and the average number of lactations achieved.

Extending the time the cow is profitable in the herd, therefore extending her longevity, can dramatically impact her profitability.

Sustainability and profitability are critical for dairy businesses, and they continue to be challenged with growing input costs.

With the HealthyLife program we can help you focus on your transition to lactation and ensuring that success leads to farm profitability.



LOYALYN HOLSTEINS FARM

> OWEN SOUND, ONTARIO

Owners: Rob and Alice Bumstead

Service Centre: Shur-Gain Ontario

Dairy Nutrition Advisor: Brynn Bross

Breed	Holstein
Head count	83
Number of milking cows	44
Average production	Milk: 11,092 kg Butterfat: 4.23% Protein: 3.03%
Type of milking system used	Tie stall
Herd classification	11 ME, 6 EX, 20 VG, 7 GP, 4 NC



INNOVATIVE GENETICS AND BREEDING: A FAMILY AFFAIR

Farming runs deep in Rob and Alice Bumstead's veins. Together with their daughter Cynthia, they manage the 320-acre property with 200 workable acres across 4 parcels of land and a herd of 83 Holsteins. They are passionate about their animals and are well known for their herds longevity, high confirmation, and high lifetime production. Rob's parents, Lloyd and Rosalyn Bumstead originally bought the farm in 1967, and began milking cows soon after. Four generations have now farmed at this location.

Loyalyn Holsteins' genetic program focuses on producing functional animals with good performance. Since producing their first VG cow in 1985 and their first EX cow in 2007 Rob, Alice and Cynthia's work has resulted in their prefix becoming associated with longevity, high confirmation, and high lifetime production. To date they have bred 65 excellent cows. They are especially pleased when their cows do well for their new owners. Truly a source of pride, and a well-known example of this is Loyalyn Goldwyn June (EX 97 6E 5*) owned by Pierre Boulet. At almost 17 years old, she is fresh again and ready for the show season! She has won Holstein Canada Cow of the Year in 2019, with over 150,000 kg of milk. She also is an All Canadian or Reserve champion six times, coming in first place three times at the Royal Winter Fair, and reserve All

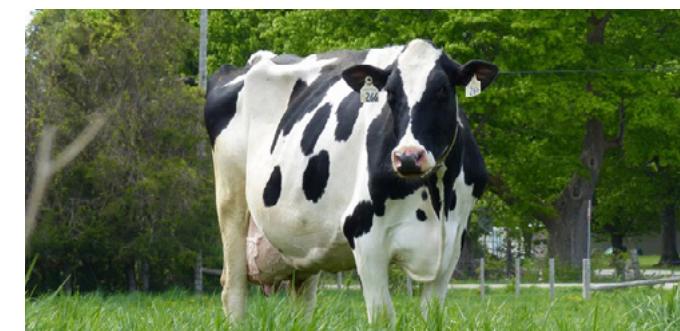
American twice. To highlight the farms total lifetime production achievements, they were awarded the Master Breeder award in 2017. With success stories such as this, it is no wonder why Cynthia also showed a Loyalyn calf for each of the 12 years of her 4H career. She is also actively involved in the farms breeding program and enjoys researching and selecting bulls, aiming to improve the traits of cows without compromising milk or fat production.

The farm relies on nutritionists Brynn Bross and Rachel Grubb's expert advice to balance simplified inputs, with performance. Working on practices which support building resilience is critical. They start with their young stock and developing a new calf into a mature and long-lasting cow. They give their calves the best possible start by careful review of calving environments, colostrum feeding and management, and supporting her through development with Shur Gain's Optivia 22% Express calf starter before transitioning them to Optivia



Rumimax at 8 weeks. Another major focus area is transitioning into lactation for both the cow and the calf's future success. They credit their great health records by carefully following vaccination protocols prescribed by their veterinarian at Miller Veterinary, and Brynn's advice with dry cow nutrition including Propulsion Gest 8 in conjunction with a DCAD diet. With their pasture fields benefiting from tree-lined stone fences in the Niagara Escarpment, they can keep older animals more active with outdoor grazing and feeding resulting in not only improved longevity, but also making it possible to achieve the herd classification. The focus in all these areas supports the lifetime daily yield of their cows.

Rob and Alice strive to be true stewards of the land and are constantly drawn to nature and working the land, welcoming the challenges as much as they do the successes. They are passionate about promoting sustainable farming as a benefit to their own farm, but also for consumer demands. In addition to implementing environmentally friendly practices such as rotational grazing when possible for their dairy heifers and beef cattle, the farm uses a range of techniques to lessen its carbon footprint.



When not working on the farm or enjoying the occasional round of golf, Rob serves as vice-president for Eastgen's board of directors, a farmer-owned company that provides genetic solutions. Alice holds the position of director and past president of the Grey County Holstein Club. Cynthia has found her calling in agriculture but additionally developed a keen eye for photography. She has won prizes for her images of animals from the farm including the Semex 2022 Photo contest, but also enjoys wildlife photography.



It is truly amazing to go into a farm and walk through a herd of animals with multiple 10+ lactations animals who appear simply ageless. They are kept and cared for in such a way that these animals remain healthy, productive, and profitable. This is even more incredible to achieve this considering this is still the original, labor-intensive facility. The Bumsteads achieve so much with such simplicity. They just do such a great job working with the natural settings that they have on their farm including finding ways to ensure appropriate shade, feed access, and positioning of their pasture lands to harvest natural winds. I am very grateful to have been able to be part of this team over the last 10 years. Congratulations on all that you have achieved, and I look forward to our continued collaborations to see what record you will set next.

Brynn Bross, Dairy Nutrition Advisor

HEALTHYLIFE

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Propulsion
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