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WHERE OUR **PASSION TO DO MORE** MEETS YOURS

It's always nice to learn from the best. We are very pleased to share the tips of some of our top herd owners. After sitting down with each of them, there is no doubt in my mind: these herd owners are passionate about what they do! They have been generous in their comments and we were eager to listen to what they had to say about how they reach their goals. Thank you to Murray and Dalyce Holman of Middle Musquodoboit, NS; Mike Carruthers of Kensington, PEI; Chris Henderson of Irishtown, NB; and Jon Bekkers of Grand Pre, NS. We are sure you will find what they had to say very insightful.

THE PASSION TO DO MORE WITH DATA

We continued to see very positive signs in 2017 that milk recording remains an important management tool for dairy farms in Atlantic Canada. We all recognize that the industry is changing rapidly. Technology has resulted in increased expectations when it comes to the speed at which data and results are provided to the end-user. Tech users want accurate data at their fingertips in an easy-to-interpret format. This concept continues to be fundamental and inherent in everything we do but it's not always that simple to provide. With the introduction of our Advisory Service in 2016, data has become even more important. Not only does our advisor, Dr. Stirling Dorrance, need accurate data when interpreting the numbers to help our farmers better manage their herds, but through our workshops and partnerships with other industry experts, we have more people realizing the "power-in-the-numbers" and paying closer attention to these numbers. Accuracy and timely delivery is, therefore, paramount.

We certainly celebrated some successes in 2017. The aforementioned Advisory Service is providing added value to Valacta customers. There is a keen appetite among dairy farmers for a better understanding of the voluminous data being generated on-farm. We will continue to build on the work that we have already done.

WE ARE THERE FOR YOU WHETHER YOU HAVE A ROBOT FARM OR NOT

Another very important aspect of the advisory service has become, and will continue to be, the robot services we have been developing. Ed Frazee, Technical Coach, leads this charge and, I am pleased to say, his hard work and proactive approach has led to 100% retention of robot herds over the past year-and-a-half. From what we are seeing in the field, it does not matter whether we are talking about Valacta reports, or the data coming from robots, 24-7. The amount of information can be overwhelming and there is a need to take this data and present it in a clear, concise, comprehensive format for the user. The newly launched robot-specific reports are an example of how we are addressing this. We will continue to adapt the products and services we offer as the technology changes our customers' needs.

THE REALISTIC APPROACH THAT MANY OF YOU LIKE

Our *Optimize with What I've Got* workshops offered in the fall reached more than 100 farmers in the Maritime provinces. The material for this workshop developed by our R&D team addressed the recent quota increases on farm. Some of you invest in larger installations but many producers are interested in doing more with what they have now. The workshop had a lot of practical tips for them.

MORE VALUABLE INFORMATION IN YOUR MILK RECORDING SAMPLE

KetoLab was another popular offering in 2017. We launched this in the fall of 2016 with great anticipation, resulting in more than 50% of our customers using the powerful herd-screening tool in its first full year of being offered in Atlantic! We certainly expect this number to continue to grow as more producers learn about its value as a herd health management tool. Did you ever stop and think of all the information that comes out of your milk recording sample? Have a quick look! (p. 39)

I am excited about what 2018 will bring. We will be offering a tool called *Plani-Lacta*, a production-planning program, as well as a *new free heifer growth web application*. Ask your technician for more information. Dr. Dorrance also presented a few *Ready, Set, Grow!* calf/heifer workshops in Nova Scotia and New Brunswick. There will be more to come in all four provinces over the remainder of 2018. If you are interested in having one in your area, please contact us.

During the past year, I have collected your ideas of what information you would like to see in this annual publication. We have added some information this year but we plan on integrating most of your recommendations in next year's edition. You inspire our passion to do more! Thank you.

Happy reading.

IT'S SIMPLE MATH

THE AVERAGE COST OF CLINICAL MASTITIS PER CASE HAS BEEN EVALUATED AT US$444.[1]

Almost 1 in 4 cows suffer from clinical mastitis each lactation cycle and coliform bacteria are frequently the cause.[2]

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VALACTA WITH YOU AT...

... THE ATLANTIC YOUNG BREEDERS SCHOOL
Ed Frazee, Technical Coach, presenting at the Atlantic Young Breeders School on the power of milk recording, on February 24th, 2017.

... THE ATLANTIC VETERINARY COLLEGE
Stirling Dorrance, DVM and Dairy Production Advisor, presenting to students at the Atlantic Veterinary College.

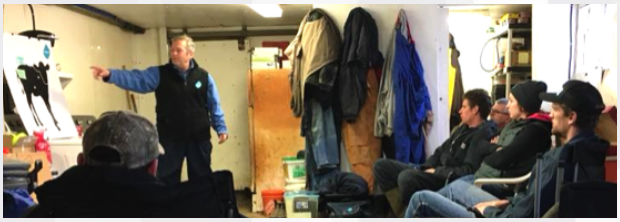
... THE DALHOUSIE U. FACULTY OF AGRICULTURE SCHOLARSHIP BANQUET
Jeff Gunn with the recipient of the first Valacta scholarship, Samantha Christie from NB.

... THE DFNL ANNUAL MEETING
Valacta Chair Pierre Lampron speaking at the DFNL Annual Meeting in St. John's on November 24th, 2017.

... THE NEW BRUNSWICK DAIRY TECHNOLOGY DAY
Valacta represented at the New Brunswick Dairy Technology Day on November 16th, 2017, in Sussex.

PHOTO: KRISTIN THIBODEAU.

... *OPTIMIZE WITH WHAT I'VE GOT* WORKSHOPS
Optimize with what I've got **workshop in Antigonish, NS, on December 1st, 2017, with Jean Brisson and Jeff Gunn.**



... *READY, SET, GROW!* WORKSHOPS
February 8th, 2018 - At A. & J. Bent Farm in Lawrencetown, NS, for a *Ready, Set, Grow!* calf workshop with Stirling Dorrance and Ed Frazee. Another good turnout with great discussion!

... THE ATLANTIC DAIRY FOCUS SHOW
Valacta was present at the Atlantic Dairy Focus Conference held in Halifax, NS, in March 2018.

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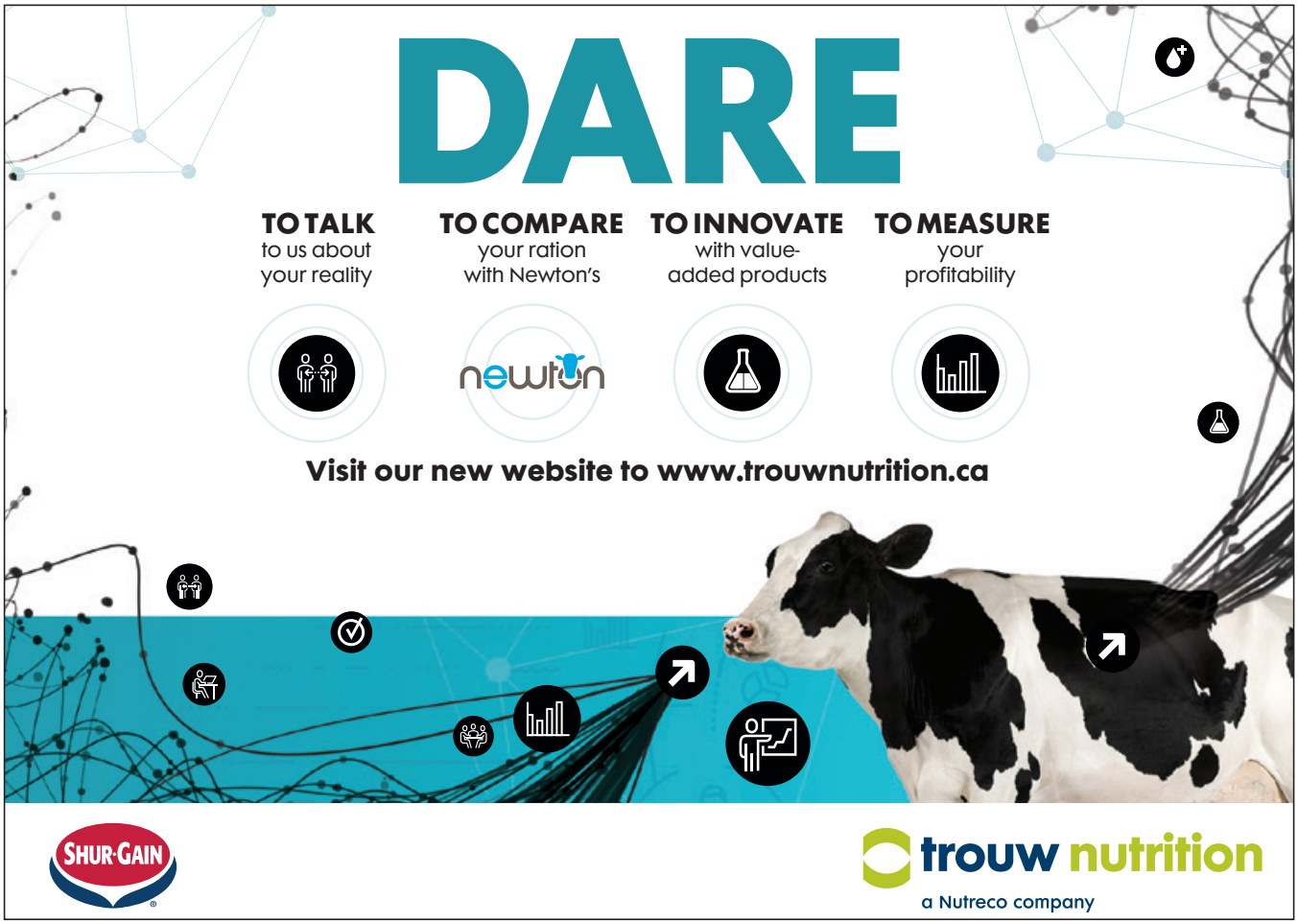
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- Mike and James Carruthers
- Route 104, Kensington, PEI
- Herd Performance Index: Highest Scoring Herd in PEI
- Ranked fourth highest Publishable Herd in PEI for BCA/Production

Q1: TELL US ABOUT THE HISTORY OF YOUR FARM AND HOW YOU GOT TO WHERE YOU ARE TODAY.

Mike: "I moved back to join Dad on the farm in 2004. We milk 115 cows 3x in a free-stall barn (herring bone parlor) built in 1994. We have hired four staff in the past five years that are primarily the milking crew, with one of them having been with us the entire time. My wife Carrie and I have three kids, Brayden (11), Keira (9), and Leah (7).

Q2: WHAT MANAGEMENT PRACTICES DO YOU BELIEVE CONTRIBUTE TO YOU HAVING ONE OF THE TOP PERFORMING HERD IN PEI?

Mike: "We went 3x three years ago, and have not looked back. This move demanded attention to detail and consistency. Consistency with everything we do is key. We want every calf, heifer and cow to be treated the same. We tell our staff how important this is. We have worked very hard on developing standard operating procedures (SOP) for daily tasks such as milking and calf feeding - now we have a working manual. We try to focus intensively on improving one thing at a time. We focus on our calves, heifers, and dry cows and we believe by doing this, we see the results in our lactating cows. We also focus on communicating the importance of getting good results and we make sure everyone is clear on our goals. For example, everyone knows what we want our pregnancy rate to be, and we all work together to achieve it.

Mike and Carrie with their children, Leah, Brayden and Keira.

I find the Valacta workshops to be very valuable - I always learn something.

They know that a "green" breeding wheel is what we want – it is very visual. I always provide feedback when there is a job well-done, or if we need to improve on something, and I keep them involved in the decision-making. We focus on four main areas: calf-rearing; heifer management; pregnancy rate and reproduction; and transitions. For our calves and heifers, our goal is to double birth weight by weaning. We want to eliminate the stresses of weaning by reducing movement from one pen or barn to another at the same time they stop receiving milk. Once they are weaned and off to a good start, we focus on getting good growth through sound, but simple nutrition, and a breeding program that has brought age at first calving from 27 months to 24 months. Attention to detail is so important. To achieve a high pregnancy rate (+20%), we use a breeding program starting at 40 days in milk which leads to all animals being bred between 76-82 days. No one falls through the cracks – the SOP for this is so important. For our transitions, we believe you do this right and your cows will milk for you. We work to reduce any stresses, follow strict protocols (Vitamin B complex, CRC boluses, calcium boluses and vaccination programs), and have a dedicated pen with 9 stalls where cows calve and spend 2-3 weeks. The animals in this pen are comfortable and can be easily monitored because we can go right to them and observe them. Every morning temps are taken so we can monitor their health status."

Q3: WHAT ARE YOUR GOALS GOING FORWARD?

Mike: "We want to produce 2 kg of fat per cow. We are at 1.75 kg now, and we believe we can go higher, but I want to do it sustainably. We want to maximize the production out of this barn – we want to get better before we get bigger. Five years ago, I thought our quota holdings were adequate, but we have increased production significantly and we now know the ceiling has been raised. Some day we will build a new barn, but we have not reached our potential in this one yet. Consistency and attention to detail will get us there."

Q4: WHY ARE YOU A VALACTA CUSTOMER AND HOW HAS VALACTA HELPED YOU REACH YOUR GOALS?

Mike: "I have always been interested in benchmarking and this is something Valacta provides. I want to know how good is good? Where should you be? I find the Valacta workshops to be very valuable - I always learn something. The workshops that were offered 2 or 3 years ago on interpreting Valacta reports were very practical and relevant. It provided me with the nuts and bolts of using the data. Three years ago, I was not using the Valacta reports like I should have been. Today, I receive my reports after a test and open them up on my laptop right away. I look at kg/cow, 305-day production, and trends – am I improving? The advisory service Valacta is now offering with the addition of Dr. Stirling Dorrance is extremely valuable to our farm. Stirling has shown us the power of the various tools that Valacta provides such as MUN and KetoLab, Transition Cow Index® is also something I watch very closely. For us, it is important to have experts as part of your team, pushing you to be better."

SEARCHING FOR THE BEST PATH TO **INCREASE PROFITS**?

BY RENÉ ROY, AGR., AGRO-ECONOMIST, R & D TEAM, VALACTA.

Right now, many dairy producers are still looking for the best way to fill all of the quota that was allocated to them over the past two years in response to market growth. Producing more is fine as long as it brings in a profit, particularly under the current circumstances, with milk prices lower than they were just a few years ago.

Exchanging ideas with other producers can be an excellent source of inspiration, but it's hard to extrapolate from one experience: What works on one farm doesn't always have the same effect on another.

By studying the technical and financial results of 400 dairy farms from 2011 to 2015 in the Agritel data bank (GCAQ data bank), I thought I might be able to root out the recipe for success. The findings of that analysis are presented here.

COST OF CONCENTRATES; MORE TO IT THAN MEETS THE EYE...

The first surprise is that the cost of concentrates only accounts for five percent of the variation in production costs. Another surprise is that the cost of concentrates per hectolitre increases only slightly as milk production per cow increases. Of course the cost is not the same on every farm, but there are low and high costs at all production levels. So high production doesn't justify unusually high concentrate costs; nor can low production be written off as a way to save on concentrates.

Does this mean the cost of concentrates is of little importance as an indicator? Absolutely not, but concentrate costs have to be interpreted in conjunction with total feed costs ($/hl) and production per cow. Although the cost of concentrates increases slightly when production per cow rises, total feed costs may decrease because there will be fewer cows to feed and therefore, less hay consumed. Fewer cows also means less work and less capital invested in farm buildings. This is why we don't see a strong cause-effect relationship between concentrate costs and production costs. In fact, the overall feed cost (forages + concentrates) has a greater impact on production costs, accounting for 19 percent of the total variation.

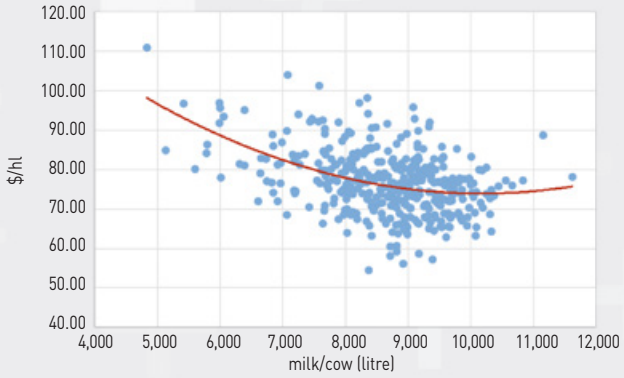
THE COST OF PRODUCTION DECREASES WHEN PRODUCTION PER COW INCREASES

Figure 1 presents the results of each of the farms part of the study sample (blue squares), and the curve shows the evolution of the relationship between production per cow and production cost per hectolitre. Unsurprisingly, the cost of production tends to decrease as production per cow increases, levelling off at about 9,500 L for the 400 farms in this study. But the scattering of results above and below the trend curve indicates that the relationship is far from perfect. And because we see good and poor results at all levels of production, increasing production per cow is not guaranteed to lead to lower production costs. We can say, however, that when the right steps are taken to increase milk production per cow, the outcome is profitable.

WHAT OTHER FACTORS MAKE A DIFFERENCE?

Forage production costs alone account for 16 percent of the variation in the production costs of the farms in the sample. Producing good quality forage at a reasonable cost has as much influence on the cost of milk production as high production per cow does.

FIGURE 1: PRODUCTION COST VS MILK/COW



Source: Agritel, 2011-2015

We can say that when the right steps are taken to increase milk production per cow, the outcome is profitable.

Work efficiency is also an important factor, accounting for nine percent of the variation. The data analysis shows that there is no link between the number of cows per worker and the herd average. So if the cows produce more milk without requiring more time, that means more milk per worker.

Lastly, we know that in comparison with our neighbours to the south or in Western Canada, Quebec producers invest quite a lot of money in farm buildings and equipment. And that's not even taking into account the price of farmland and the machinery used to farm it. Investing is a business requirement, but it's important to make the right choices. The analysis reveals a significant relationship between the cost of production and the return on assets, with the former accounting for 34 percent of the variation in the latter. Investing wisely thus means putting less horsepower in the field and more kilograms in the barn!

CONCLUSION

The trends observed on the 400 farms included in the analysis give us an indication of the aspects that have the greatest impact on milk production costs. The analysis confirms some things we already knew, but also dispels some of the myths. Moreover, the results provide food for thought: If these trends are not consistent with what we're seeing on our farms, then we'll have to consider doing things differently. The key lesson here is that we mustn't rely on a single indicator and forget about the rest, because we risk losing profit elsewhere. Finally, it's important to work on one goal at a time, while keeping an eye on the operation's overall performance. Something to reflect on over the summer...

THE PASSION valacta TO DO MORE FOR THE FUTURE

MURRAY AND DALYCE HOLMAN

- Middle Musquodoboit, NS
- Herd Performance Index: 99th Percentile, Ranked Third in Atlantic.
- Top tie-stall herd in Atlantic
- Ranked third highest Publishable Herd in NS for BCA/Production

Q1: TELL US ABOUT THE HISTORY OF YOUR FARM AND HOW YOU GOT TO WHERE YOU ARE TODAY.

Murray and Dalyce: "We started milking on this farm seven years ago in June. We purchased Kennetcook Holsteins from Stanley White (he still stops by and brushes the cows every three weeks!). The herd had tremendous genetics, developed by a tremendous cow man. This truly has been a family run farm with all 4 of our children found in the barn helping with chores, field work and milking during their growing up years. The farm includes a 52-cow tie-stall barn fed a TMR from top quality forages. For the first five years, there was no quota added. Quota was purchased in the past two years, when it became available. We made the switch from 2x to 3x

in October 2016 and production has increased from 9,200 kg per cow in 2015 to 13,700 kg per cow in 2017, a 48% increase. We have not looked back."

Q2: WHAT MANAGEMENT CHANGES HAVE YOU MADE THAT HAVE CONTRIBUTED TO THE SIGNIFICANT INCREASE IN HERD PERFORMANCE?

Murray and Dalyce: "When we went 3x, our production increased significantly as did the workload, so our oldest son came home to work with us part-time. Along with the significant increase in production, we saw a drop in our butterfat. We focused on improving our feeding program. We increased the amount of energy in the diet, moving to a high corn silage diet (60-70%) which helped drive components. We really focus on bunk management, ensuring that our cows have fresh, consistent, balanced feed in front of them throughout the day. This maximizes dry matter intake. We also focus on cow comfort, making several changes to our old tie-stall barn. We installed more fans and made modifications to some of the stalls, including moving from a solid pipe head rail to chain head rails to enhance lunging ability; removing the curb at the front (lots of jack-hammering for both of us!); utilized a combination of straw, chopped hay, shavings and sand for bedding; as well as shifting cows around, as needed, to ensure stall and neighbor compatibility. We paid lots of attention to the little details. Dalyce points out that "Murray is extremely quiet and gentle with the cows. We are not that comfortable with technology (we will learn!), so we like to keep things simple on our farm. We like to travel and visit other farms to see what they are doing – and we always take a calculator! There is always something to learn. We have a team of experts that we use regularly, including Dan Mosely from Perennia; our veterinarian, Dr. Alexander Burrows; Holstein Canada; and Valacta. Ninety-five percent of our life is the barn. This is not for everyone, but this is how it is for us. We love what we do. When we go on vacation, we talk farming all the time! It also helps that your family members are interested and that you cultivate that interest. Our 12 year old son reads the milk slip every pick up and notices whether the cows are up or down! We also believe that you MUST be open to new ideas and not be afraid to share ideas. Everyone benefits. That is the only way to improve. You must be willing to look past your own fence post at the end of the driveway – there is always something to learn."

Q3: WHAT ARE YOUR GOALS GOING FORWARD?

Murray and Dalyce: "Our focus is increasing production per cow. We want to reach 2 kg of butterfat per cow. A few years ago, we did not think this was possible, but we now believe that it is. When we went to 3x, the focus was on feeding and maximizing dry matter intake. Now we need to cull some older cows that are not doing well on 3x and focus on getting our heifers milking more. They are doing well now, averaging 12,000 kg, but we know we can get them to 13,000 kg. We have come a long way, but we have more room to improve. We have our sights set on expansion as we have 3 interested boys. However, before we think of building a new barn, we want to maximize what we can get out of the current barn. This year we are planning to install tunnel ventilation, add more lighting, and increase the size of some of our stalls. We believe these small, but significant changes will help us maximize profitability. We want to keep our expenses down – keep things simple."

"Ninety-five percent of our life is the barn.This is not for everyone, but this is how it is for us. We love what we do. When we go on vacation, we talk farming all the time!"

Q4: WHY ARE YOU A VALACTA CUSTOMER AND HOW HAS VALACTA HELPED YOU REACH YOUR GOALS?

Murray and Dalyce: "In the past, my (Murray) focus was to have good cows. I was on official test because we wanted publishable records and awards. Our focus has shifted. We are on Valacta because we want data to help us better manage our herd and our overall business, maximize herd performance, increase profitability, thus ensuring future sustainability of the operation. We give a great deal of credit to Valacta because they are always willing to do more and recognize that the needs of the industry are changing. Valacta has done a better job of helping dairy farmers interpret the powerful information on the reports – we never used this information like we should have. Now we are. Meeting Dr. Stirling Dorrance at Dairy Focus for the first time was a turning point for us. Now, we are using him as an advisor and we have turned on milk urea nitrogen (MUN), KetoLab, GestaLab, and Transition Cow Index®. These are powerful tools for managing our herd.

MORE MILK FOR HEIFERS AND LESS DIRTY TAILS? IT'S POSSIBLE!

BY DÉBORA SANTSCHI, PHD., AGR., DAIRY PRODUCTION EXPERT - NUTRITION AND MANAGEMENT, AND
STEVE ADAM, AGR., DAIRY PRODUCTION EXPERT - ANIMAL COMFORT, BEHAVIOUR, AND WELFARE, R&D, VALACTA

Maximizing heifer growth early in life leads to more vigorous, healthy and better developed heifers that breed earlier, thus leading to higher productivity and a more rapid return on investment.

Because young heifers are unable to digest anything other than milk proteins for the first three or four weeks of life, it is crucial that they receive a sufficient amount of good quality milk or milk replacer as soon as possible after birth. But how do you increase milk consumption rapidly while avoiding diarrhea?

1 THE RIGHT QUANTITY OF GOOD QUALITY COLOSTRUM, AND NOT ONCE BUT TWICE!

A recent study conducted on 827 cows (67 farms) in the United States revealed that immunoglobulin (IgG antibody) concentrations varied from 2 to 200 g/L in first-milking colostrum (Morrill et al., 2012). Knowing that a newborn needs 200 g of IgG to ensure a successful immune transfer, a calf would need to ingest anywhere between 1 and 100 L of colostrum during its first feeding...

How do we rate in terms of colostrum quality? In our most recent "Ready, Set, Grow!" workshops, we assessed the quality of colostrum samples taken from cows on different farms. The refractometer values we found varied between 13 and 32% Brix (equivalent to about 3 to 111 g/L of antibodies). To ensure that 200 g of antibodies are transferred to the calf, the animal would have to consume anywhere from 1.8 to 67 L in its first meal! It goes without saying that it is a good idea to test the quality of your colostrum to make sure you are only giving the best to your future milk producers.

OUR RECOMMENDATION: Ad libitum feeding of excellent quality colostrum (≥ 22% with a Brix refractometer) within one hour of birth and colostrum (from the first milking) again at the next feeding (See FIGURE 1).

FIGURE 1

How do you know if your colostrum is of good quality?

There are a number of tools available, but we strongly recommend the refractometer: it is more accurate and affordable, and the results are not dependant on temperature.

CALF REQUIREMENTS: 200g OF ANTIBODIES (IgG) valacta

	REFRACTOMETER	COLOSTROMETER (Colostrum at 20 °C for test)	COLOSTROBALLS (Colostrum at 20 °C for test)
CALF (4 L) + FROZEN	26%: min. 2.5 L 24%: min. 3.0 L 22%: min. 3.5 L	GREEN ≥ 50 g/L Will need ≤ 4 L	IF AT LEAST 1 GREEN Will need ≤ 4 L
FEEDING ON DAY 2	20%: min. 4.5 L	YELLOW 30-50 g/L Will need 4-6 L	IF AT LEAST 1 ORANGE Will need 4-7 L
FEEDING ON DAYS 3-4	18%: min. 6.5 L 16%: min. 9.5 L	RED <30 g/L Will need ≥ 7 L	IF ONLY RED Will need ≥ 8 L

2 A CLEAN, DRY, DRAFT-FREE AREA

Newborn calves move from a sterile (the uterus) to a contaminated environment (the barn) in a matter of minutes. That environment has a huge influence on their susceptibility to pathogens! To maximize their absorption of antibodies, heifers

need to be dried off thoroughly soon after birth and housed in a clean, well-ventilated (open pens) but draft-free space set-up with fresh bedding (thick straw). An additional source of heat is also beneficial during the first few hours after birth. The key to success is to ensure that the immunoglobulins from the colostrum penetrate the newborn's intestine before the bacteria from the environment do. This is why it is so important that heifers receive colostrum as soon as possible after birth (within one hour).

OUR RECOMMENDATION: Lots of straw bedding, good ventilation (max 0.3 m/s) at calf level, and a source of heat (e.g., heat lamp) during the first hours of life if the temperature is below 10-15°C.

3 SAME MILK, SAME CONCENTRATION, SAME TEMPERATURE, SAME SCHEDULE ... EVERY DAY

Calves LOVE consistency! It is important to mix the milk replacer the same way every day and feed it at a constant temperature. If the calves are fed three times a day, it is more important that the schedule be consistent than that the feedings be exactly 8 hours apart. If the calves are consuming whole milk, then bulk tank milk or a mixture of milk from a number of cows will automatically be of more consistent composition than discarded milk or milk from a sick cow.

OUR RECOMMENDATION: Be consistent!

4 LET CALVES DRINK AD LIBITUM.

If you get your calves off to the best possible start and reduce the presence of pathogens in their environment, there is no reason to avoid giving them more milk earlier on. Ideally, the calf should continue to receive milk from its dam during the second and third days of life (transition milk) and then switch to whole milk or milk replacer.

OUR RECOMMENDATION: Offer heifers 6 L/d of transition milk on days 2 and 3 of life and then 8 L/d of milk or milk replacer on day 4.

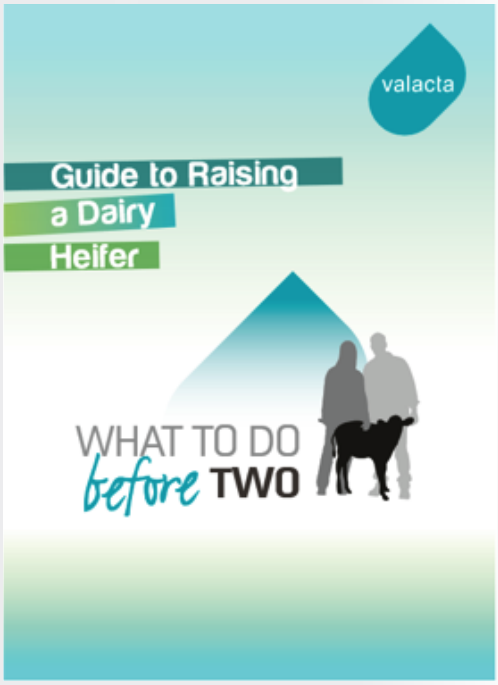
All things considered, there are two basic principles to ensure your future milk producers get the best start in life:

1- a successful immune transfer at birth and environmental conditions that favour immunity
2- ad libitum milk intake during the first days of life.

Every little change aimed at improving newborn calf management that adheres to these two principles will help produce productive cows for your herd in the future.

Tools at your fingertips!

Please click to access



RAVENWOOD HOLSTEINS

- Alex and Chris Henderson
- 753 Scotch Settlement Road, Irishtown, NS
- Herd Performance Index: Second Highest Scoring Herd in NB
- Ranked highest Publishable Herd in NB for BCA/Production

Q1: TELL US ABOUT THE HISTORY OF YOUR FARM AND HOW YOU GOT TO WHERE YOU ARE TODAY.

Chris: "I came back with my family and joined my father, Alex, on the farm in 2015. I had been living in Hampton, NB working for Co-op Atlantic. All three kids were heavily involved when we first moved back. I also hired a herdsman, Martin Poirier, who is a real "cow guy" and who remains a very important part of the team today. When I came home to the farm, Dad was milking 55 cows with room for 85 cows in a tie-stall, tail-to-tail barn milking 2x with a two group TMR. In 2015, we installed a rail system with Del Pro milkers which was a huge management step for us, as it greatly increased the amount of data we could collect on farm daily. With more information on

a daily basis, we were able to make some significant improvements. Dry cow nutrition became a priority and we started target feeding top dress by hand because of the daily data we could now collect. In 2016, we changed stall dividers, removed the head rail and put in chains. In 2017, we put in a Rovibec feed pusher which has saved on a lot of manual labour.

Q2: WHAT MANAGEMENT PRACTICES DO YOU BELIEVE CONTRIBUTE TO YOU HAVING ONE OF THE TOP PERFORMING HERD IN NB?

Chris: "When I came home to join Dad on the farm, our goal was to fill the barn and to fill the quota we had. This is the key to making things pay. We purchased some animals, but this was not the way we wanted to grow the herd. Now we have increased our heifer numbers by using sexed semen which has allowed us to grow internally, selecting the genetics that fit our goals. We have made some adjustments to our calf and heifer-rearing programs as well, increasing feeding frequency and amount per calf per day, along with our transition dry cow program. Paying close attention to your calves, heifers and dry cows is so important to ensure cows get off to a strong, healthy start at the beginning of each lactation, thus maximizing animal performance. Team work is critical for the success of any operation. Martin and I focus on the cows, and we work closely with our nutritionist, Alison Foth of Atlantic Farm Services and our veterinarian, Dr. Helen Fraser. Soil and cropping continues to be Dad's main responsibility. We work to create a relationship within our team where people can feel free to have input and speak freely – this is so important to our success. We also want everyone to understand the importance of record-keeping and development of SOP's to ensure accuracy and consistency, so nothing falls through the cracks. As an example, recently Martin placed a broken bolt on my desk and told me that he had just found it in the hammer mill, resulting in some whole barley coming through unprocessed. He estimated that it was like this for close to three days, resulting in a 2 kg per cow per day drop in production. He wanted to put the bolt on display to remind us what can happen, if one step in the process is compromised. This demonstrates his diligence and attention to detail, something we value very much in our operation."

> Paying close attention to your calves, heifers and dry cows is so important to ensure cows get off to a strong healthy start at the beginning of each lactation, thus maximizing animal performance.

Q3: WHAT ARE YOUR GOALS GOING FORWARD?

Chris: "We are now filling our quota, but we want to optimize our operation (continuing 2x), now that we have made some changes to get us to this point. For 2018, we want to focus on turning over more land and push our cropping needs. We have fields in bad need of renovation, especially our corn land. Our goal with this focus is ultimately to continue to maximize production per cow, but to do it as inexpensively as possible. We aim to do this by keeping feed costs down by improving forage quality, thus reducing inputs of more expensive feed additives/supplements. We will also continue to focus on our calf/heifer and our dry cow programs, continuously working to make improvements in feed quality, animal comfort and health. Someday, we will expand and build a new free-stall barn for 110 cows, but we believe it makes more sense right now to take the pieces we have, and move them around so that they fit together. With this strategy, we will strengthen the system we have, rather than expanding and starting new."

Q4: WHY ARE YOU A VALACTA CUSTOMER AND HOW HAS VALACTA HELPED YOU REACH YOUR GOALS?

Chris: "I am an "aspiring" breeder and records on my animals continue to be important to me. Having said this, having access to data to better manage my herd is also a very important reason I am on Valacta. Data is a key to our success. Without information on our herd and individual animals, we have no benchmarks to allow us to set targets, monitor our progress, and identify where we may have slipped. With this powerful information, we can dissect trends and look for ways to constantly improve. For example we know that after 3 weeks post-calving, we want 40 kg of milk from our first-calf heifers, 50 kg from our second lactation animals, and 60 kg from our third-plus cows. It is very difficult to achieve this and maintain these levels, if we have no idea where we are. We value Valacta for the component results on individual animals, and for analyses such as MUN's, which we do every month to monitor the ration and rumen health. Transition Cow Index® is another tool we use faithfully, as it helps us monitor our transition cow program. The advisory services now being offered through Stirling Dorrance also brings value to my farm. He brings third party, unbiased expertise to my team and I plan to include him in annual meetings with my advisory team to evaluate where we have been and where we are going. Lastly, the Valacta workshops are practical and relevant – you always learn something.

ADVISORY SERVICES IN ATLANTIC

ROBOT SERVICES

With the increasing numbers of automated milking systems being installed on farms, Valacta has developed specialized services for robots. This service offering in Atlantic is being led by Ed Frazee, Technical Coach. Ed works closely with Valacta experts in Quebec, including Gabrielle Guitard, Robot Advisor, who has visited the region several times over the last two years. Gabrielle and Ed have not only visited many robot herds to provide support and expertise, but Gabrielle has offered two robot-specific workshops in the Maritimes. Ed continues to develop his technical and advisory expertise and will provide support to technicians during a milk test on a robot, and will make regular visits, as needed, to provide advisory services, primarily focusing on interpretation of the data. "The primary goal of our robot services is to ensure that the milk test runs smoothly and that there is value in the information coming back to the farmer", says Ed. We will continue to develop our expertise on not only the interpretation of the data, but also walking through the barn, making observations and offering advice in areas like cow comfort, stocking density, bunk management, and animal behavior and flow, to name a few. Ed points out that, "Proper interpretation of the data coming off the robot and contained in the Valacta reports can be powerful, often resulting in tremendous gains in herd performance." The robot service also includes:

- Robot sampler rental and sales
- Ori-Automate – a software program enabling data to be transferred directly from the robot to the Valacta Vision2000 system and then to "push" the results back after a milk test
- Valacta robot-specific reports showing key performance indicators (benchmarking to come, as the amount of data collected increases)

ADVISORY SERVICES

We continue to grow our advisory services with Dr. Stirling Dorrance. The primary goal of the advisory service is to help farmers master their Valacta reports so that they can maximize the benefit they receive from this powerful information. A huge part of this process is to identify practical solutions, which Stirling will do by involving whomever the farmer wants to be a part of the discussion. Oftentimes this is the entire on-farm team, including the farmer and staff, nutritionist, feed rep and veterinarian. Stirling will continue to not only provide support to dairy farmers, but also to the technical team to better equip them with the skills they need when interpreting the data. Because the need and interest for the service has been growing in Atlantic. Ed Frazee's expertise will be added to this service offering as well. Ed brings his 25 years of experience and the keen understanding of Valacta reports. He will bring his support to producers. Ed has already started working with Plani-Lacta, a powerful production planning software program, for some herds and we will continue to make this available to those interested customers. We are excited about the value that we will bring to customers looking to do a better job of utilizing on-farm data to monitor herd performance, to identify areas needing attention, and to help find solutions to maximize performance, productivity and profitability. When asked what are the top three issues he sees on Atlantic dairy farms today, Stirling says, "The number one issue is transitions and dry cow management; number two is drying off cows, especially high production cows and how this is related to udder health; and the number three issue is days dry, that are all over the place, negatively affecting transitions. Pay attention to these things and you will ensure that cows get off to an optimum start, leading to maximum performance. Top producing herds are achieving high performance through attention to detail in the areas of calf, heifer and dry cow management, but they need correct information/programs/benchmarks to monitor and improve these areas. We can offer this through milk recording and the powerful reports and analyses we offer. Often it is just fine tuning." Robbie MacGregor, owner of MacGregor Dairy Farm Ltd, tells us, "Valacta's advisory service offering has completely changed how we view the value of Valacta for our farm. Stirling has been tremendous in helping us with our transition cow program. He "pushes" us to be better and his follow-up has been outstanding. Our dry cows are performing the best they ever have - we have seen a total 180° in our results. I am confident that due to the service and expertise we have had from Stirling and Valacta, we will see our Herd Performance Index increase in the next two years, because our longevity score will improve due to improved transitions in our older cows. We are excited about this."

Stirling Dorrance

TRANSITION COW INDEX®

EVERYTHING YOU NEED TO KNOW IN **TEN POINTS**

BY DÉBORA SANTSCHI, PHD, AGR., DAIRY PRODUCTION EXPERT – NUTRITION AND MANAGEMENT, AND ROBERT MOORE, PHD, SCIENTIFIC MANAGER, R&D VALACTA

You receive your results for the last test. You open the Transition Cow Index® report. And what are you looking for? Here are the key points you should focus on when opening your next TCI report.

HOW DOES THE TRANSITION COW INDEX WORK?

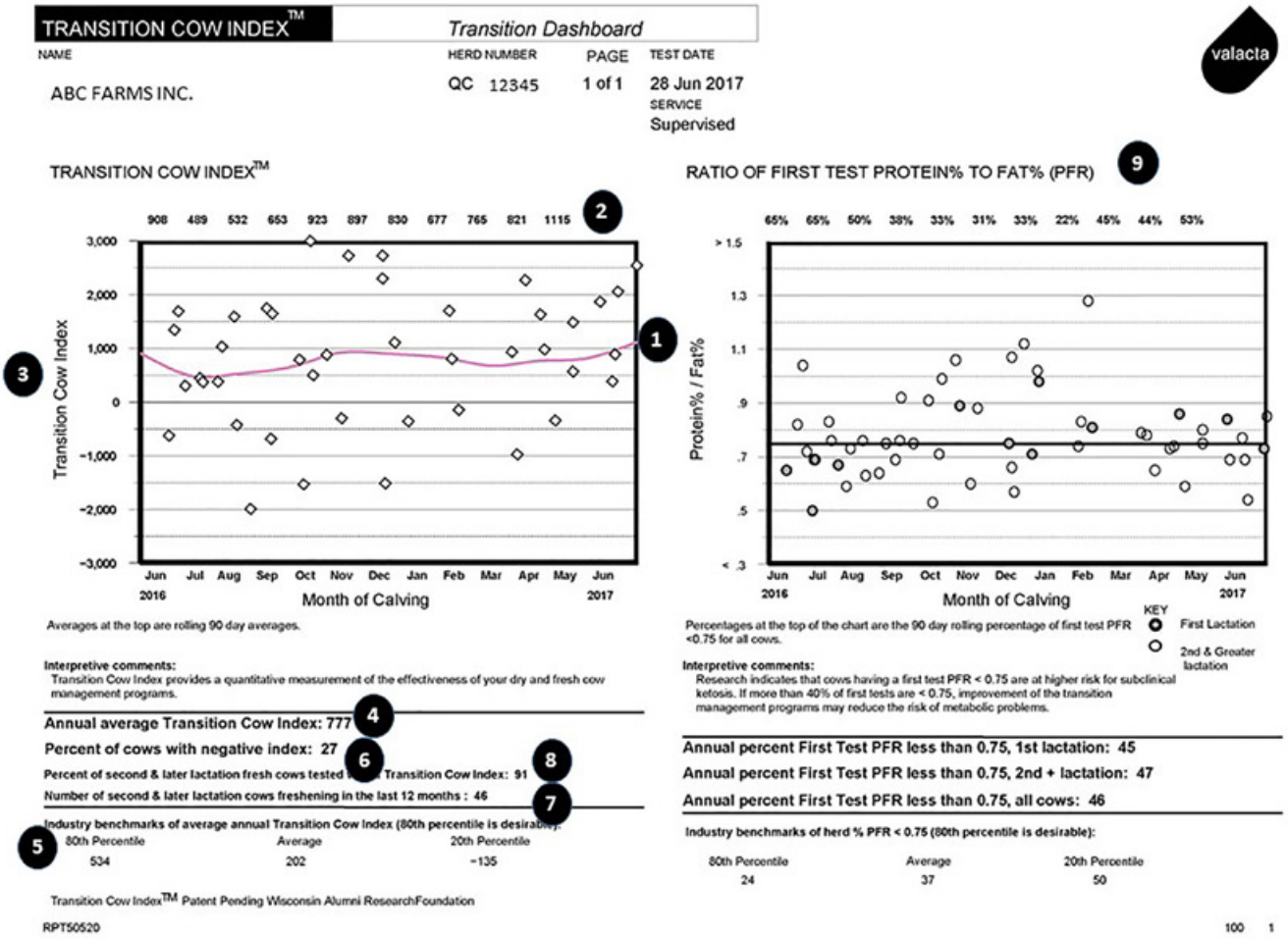
The TCI®, developed by Ken Nordlund at the University of Wisconsin, has been offered by Valacta since 2010. The principle is simple: a 12-factor equation is used to predict how much milk a cow is expected to produce during her 305-day lactation. At the cow's first test date, the actual projected 305-day milk yield is compared to this prediction. If the cow's production is exactly as predicted, the TCI is 0. If the cow produces more than predicted, the TCI will be positive; if less, then the TCI will be negative. A TCI value can be calculated for all second and greater lactation cows that are between 5 and 39 DIM at their first test day.

The TCI is an objective way of evaluating the start of lactation for each of your cows. Since a good start to lactation is generally a promising sign for a good lactation, an increase in the TCI suggests that your cows will have a higher milk yield over the coming lactation. Generally speaking, a 100-point increase in your herd's average TCI corresponds to a yield increase of 93 kg of milk per cow for 305 days of production (Valacta data, 2014).

Factors considered in the prediction equation

1. DIM at first test
2. Previous lactation milk yield
3. Previous lactation days in milk
4. Lactation start reason (calving, abortion, ...)
5. Previous lactation start reason
6. Calving month
7. Previous lactation last test linear score
8. Dry period length
9. Current lactation milking frequency
10. Previous lactation milking frequency
11. Parity
12. Breed

FIGURE 1



TCI GRAPH IN 10 POINTS

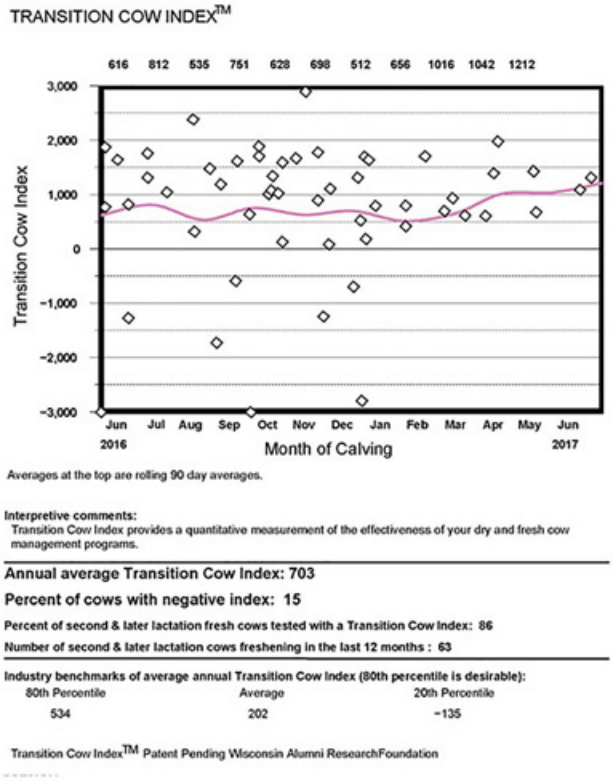
Figure 1 shows the TCI graph for a Quebec herd. The 10 points to monitor are explained below.

1 **Pink line**: represents the herd's 90-day rolling average. Allows to quickly assess your herd's performance and see if the average has changed lately (For example, to evaluate a response to a management or feeding change).

2 **Numbers along the top of the graph**: represent the 90-day rolling average for each of the 12 previous months. The most recent score appears on the right. The goal here is a high number, every month! Note: For herds of 250 cows or more, this value is a 30-day average.

3 **Dispersion**: offers an overview of individual cow scores. Even with a very high average, the wide scattering of dots suggests competition among the cows with some cows that are getting off to a great start, while others are falling behind. Figure 2, however, shows the results for a herd that has a similar average but a totally different dispersion. In this case, a high number of calvings in late 2016 increased competition. At the start of 2017, however, fewer cows in the dry cow or fresh cow pen meant less competition, and the dots were much closer together, indicating rigorous management.

FIGURE 2



4 **Average annual TCI**: represents the average score for all the cows that have calved in the past year. Aim for the highest score possible!

5 **Comparable statistics**: allow you to compare your farm with the other farms in the province. The current average for Quebec is slightly over 200, but varies from -2,348 to +1,796.

6 **Percentage of cows with a negative TCI**: While often overlooked, this number is critical because it allows you to assess your potential to improve the transition in your herd by making a few management or feeding changes. It is often inversely proportional to the annual average, but is quite variable. The current Quebec average is 38 percent, but varies from 0 to 100 percent. The target here is the lowest number possible.

7 **Number of cows in second or greater lactation that have calved during the previous 12 months**: Simply a reminder of the number of cows in the herd for which it would have been possible to calculate a TCI during the past year. Because the factors in the equation require data from the previous lactation, a TCI cannot be calculated for first-lactation cows.

8 **Proportion of fresh cows in second lactation or greater with a TCI**: When under 100, it is usually because some cows were outside the range of 5 to 39 DIM at their first test. Hence, the greater the interval between tests, the greater the number of cows outside this range. For herds tested 8 to 10 times per year, this value is generally between 75 and 90. A high value means the evaluation represents all of the cows in the herd.

9 **Graph of first test protein-to-fat ratio**: A protein-to-fat ratio below 0.75 suggests excessive mobilization of body reserves and could point to possible ketosis. However, this ratio has become less relevant as it lacks precision compared to the results provided by other tools such as KetoLab (Valacta) or on-farm tests which measure ketone bodies directly. These later tests are strongly recommended to supplement the TCI information.

10 **Fresh Cow List**: This report provides more information on individual cow performance and TCIs. It also presents performance data for current test fresh heifers for which a TCI could not be calculated as there was no information for a previous lactation, as well as early lactation removal from the herd (see Figure 3).

FIGURE 3

TRANSITION COW INDEX™ — *Fresh Cow List*

10

valacta

NAME	HERD NUMBER	PAGE	TEST DATE
ABC FARMS INC.	QC 12345	1 of 1	28 Jun 2017
			SERVICE: Supervised

Current Test Fresh Cows With Transition Cow Index™

Cow Name	Chain #	Days Dry	Calving Date	Lact #	DIM	TCI	305 ME Milk	Current Test Milk kg	Current Test P/F Ratio	Current Test Fat %	SCC 000/ml Prev Lact Last	SCC 000/ml Curr Lact First	Condition Affecting the Test	Health Events
COW A	1	46	10 Jun 17	2	18	386	12133	40.8	.77	4.4	35	195		
COW B	2	48	12 Jun 17	4	16	892	11383	44.8	.69	4.5	63	20		
COW C	3	38	01 Jun 17	4	27	1866	13592	53.9	.69	4.2	103	17		
COW D	4	163	14 Jun 17	3	14	2060	13492	54.5	.54	6.2	101	1524		
Averages		74			19	1301	12650	48.5	.67					

The 305 ME value listed is not used in calculating the Transition Cow Index. It is included in this report as an indicator of current (projected) lactation performance.

Current Test Fresh Heifers

Cow Name	Chain #	Calving Date	Age at Calving	DIM	305 ME Milk	Current Test Milk kg	Current Test P/F Ratio	Current Test Fat %	SCC 000/ml	Condition Affecting the Test	Health Events
COW E	5	17 May 17	01-11	42	13285	34.7	.78	3.9	21		
COW F	6	24 May 17	01-11	35	12764	33.1	.84	3.7	206		
COW G	7	30 May 17	01-11	29	11592	29.9	.84	3.6	52		
COW H	8	26 Jun 17	01-11	2							
Averages				27	12547	32.6	.82				

Special Situation Cows

Cow Name	Chain #	Calving Date	Lact #	DIM	Status	Condition Affecting the Test	Health Events

Cows Leaving Herd < 60 DIM

Cow Name	Chain #	Lact #	DIM	Age at Exit	TCI	305 ME Milk	Last Test Milk kg	Last Test P/F Ratio	Last Test Fat %	SCC 000/ml	Left Date	Reason	Health Events

Cows left herd < 60 DIM (other than for dairy production) in last 365 days: 0 out of 21 cows left. Average number of cows in herd: 59

A NEW REPORT FOR ROBOTIC MILKING FARMS

BENCHMARKING AMONG ROBOTIC MILKING HERDS TO **IMPROVE PRODUCTION**!

BY GERVAIS BISSON, AGRONOMIST, DAIRY PRODUCTION EXPERT - MILKING ROBOTS, R & D, VALACTA.

Milking robots provide a wealth of information that can be used to improve production and herd management. However, benchmarks are also quite useful as they allow robotic milking farms to compare their herd results with other operations using milking robots and with the average for dairy farms in general. This will soon be possible thanks to Valacta's newest report, PRODUCTION AND FEED – Robot test.

In Quebec, there are currently over 600 robotic milking dairy farms, and many more are in the process of transitioning to robots or plan to do so in the near future. How are these farms performing relative to one another? Until now, an accurate answer to that question was hard to come by. Regardless of the brand, milking robots provide valuable information for herd management. However, benchmarking and data comparison among similar operations is key to improving performance. While aggregating robotics data with milk recording data, this new herd management tool will soon be available to dairy producers using robotic milking systems.

Here is an overview of the new PERFORMANCE AND FEED robot report (see Figure 1).

1 ROBOT DATA

The robot provides a multitude of data for each cow, which may vary considerably from one milking to the next. To draw any conclusions about herd performance, it's a good idea to step back and look at the larger picture. To reduce the effect of daily fluctuations, the results are presented on a seven-day basis. The first column presents the results of the day, which can then be compared to the next two columns: the 12-month average for the farm and the average of all robotic milking farms in Quebec enrolled on milk recording. The 12-month average is calculated as of the second test, and then on a 12-month rolling basis. Once a critical mass of data has been compiled, the provincial average for robotic systems will be made available. The data presented in this section refers only to robotically milked cows.

How will it work?

On the first visit, your Valacta technician will enter in the database four pieces of information that are unlikely to change often:

- Start date for 1st milking robot
- Number of robots or milking boxes
- Robot manufacturer
- Type of cow traffic (free or guided)

The technician will then enter other information related to the central section of the robot report. On subsequent test days, only the relevant robot data will be entered.

2 GENERAL HERD DATA

The first section of the report presents data for all the cows in the herd. Any cows milked with a milking system other than the AMS will be included in this data but will be excluded from the robot data. This first section of the report presents key data for the whole herd and includes some new criteria:

- Peak milk (kg)
- Days in milk at peak (Peak DIM)
- % of cows removed from the herd over 12 months for SCC issues (udder health)
- % of cows removed from the herd over 12 months due to foot problems (feet and legs)

This section presents test-day results as well as three comparative levels: the 12-month herd average, the provincial average for robotic milking herds, and the provincial average for all herds.

FIGURE 1: GENERAL INFORMATION ON ROBOTIC MILKING HERDS

PERFORMANCE AND FEED — *Robot test*

NAME	HERD NUMBER	PAGE	TEST DATE
Patrick Producer	QC 99999	1 of 1	12 Sep 2017

SERVICE
Non supervisé

valacta

2 Herd data

	Test day	12 months	Robot prov. avg.	Prov. avg.
Number of cows	60	65.7	96.9	65.3
Cows in lactation	53	56	83.8	56.7
Actual milk (kg)	32.4	9972	10272	9675
Fat (%)	3.98	4.12	3.94	4.01
Protein (%)	3.45	3.40	3.29	3.30
Peak milk kg	43.5	42.7	42.2	40
Peak DIM	41	48	49	
Cows leaving herd (%)	5.0	35.0	32.9	32.3
Cows leaving - foot (herd %)		4.6	3.1	
Cows leaving - SCC (herd %)		3.0	3.8	

1 ROBOT DATA (7 days)

	Results	12 months	Robot prov. avg.
Milk/robot (kg)	1718	1714	
Fat/robot (kg)	68.4	69	
Milk/cow/day (kg)	32.4	31.6	
Number of cows/robot	53.0	54.3	
Number of milkings/robot	140	135	
Number of milkings/cow	2.7	2.5	
Average milk/milking (kg)	12.3	12.7	
Number of refusals/cow	1.5	1.5	
Number of failures/robot	11.5	7.8	
Robot free time (%)	23.4	27.4	

3 Feed Cost

	Test day	12 months	Robot prov. avg.	Prov. avg.
Milk value/cow ($)	19.63	7190	6903	6904
Margin over feed cost/cow ($)	12.35	4787	4653	4613.4
Milk value ($/hl)	72.02	74.33	71.3	73.69
Concentrates ($/hl)	15.54	13.84	12.76	12.68
Feed cost ($/hl)	26.28	24.87	24.77	24.57
Margin over feed cost ($/hl)	45.74	49.46	49.19	49.62
Milk value/robot ($)	1201.27[1]	1236.91		

[1] Calculated using the milk produced per robot.

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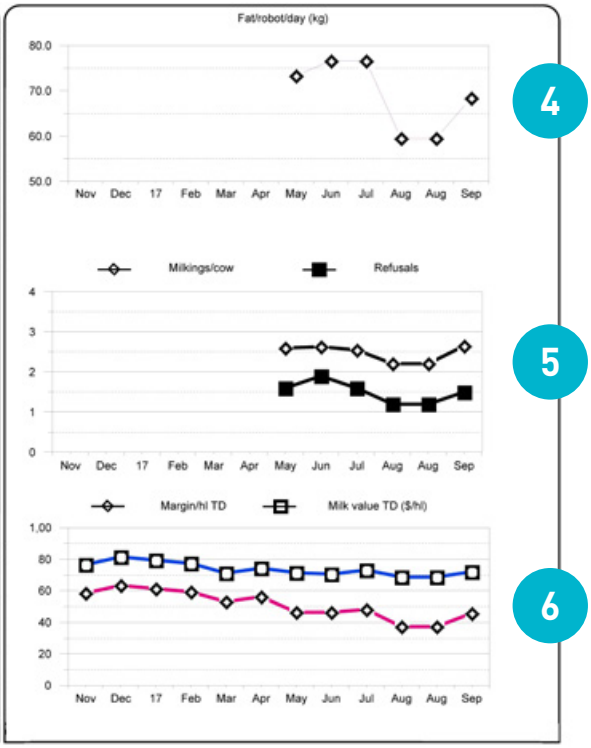

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3 FEED COST

A robotic milking system is a significant investment for a dairy operation, so it is important that the report include an economic component. Feed cost needs to be measured and compared among farms. The portion of the feed cost related to concentrates is of particular interest, since concentrates are often purchased off-farm.

Milk value per robot

An additional value that now appears in the feed cost section is the milk value per robot, calculated from the robot's production data. This is also a different way of calculating per-robot productivity. The value is calculated on the basis of the average monthly milk price, which varies from month to month.

The right-hand section of the new report includes graphs.

4 FAT PER ROBOT PER DAY (KG)

Robot productivity can be quantified in a number of ways, but the most common measurement is the number of kilograms of fat per robot. Since the producer's milk quota is also based on the number of kilograms of fat per day, this parameter makes it easier to see how much quota is produced by the robotic milking system. It also provides a common basis for comparisons between breeds. Comparing Jersey herds to Holstein herds on the basis of milk production would put Jerseys at a disadvantage, whereas a kg-of-fat basis levels the field, since there are herds of all breeds producing over 80 kg of fat per robot.

5 NUMBER OF MILKINGS AND NUMBER OF REFUSALS

This graph can be used to monitor changes in these two parameters on a yearly basis, making it possible to link them to other robot parameters. For example, if milk production has increased considerably since adding extra cows to the herd, it would be unsurprising to see a drop in the number of refusals, and possibly the number of milkings as well.

6 FEED COST GRAPHS

It's good to have the numbers, but seeing the trends on a yearly basis is even better. The graphs allow us to easily draw conclusions on the variations in the milk value and especially on the margin.

This new tool, designed specifically for robotic milking producers, is a first step towards using data from automated milking systems. Don't hesitate to consult your technician or advisor to learn more about this tool and Valacta's specialized AMS services, which include:

- Start-up support
- Strategic advice for your transition or construction project
- Strategic advice in robotic milk production
- Ori-Collector rental for milk recording
- AMS data transfer with Ori-Automate software.

KIPAWO HOLSTEINS

- Jon and John Francis Bekkers
- 11429 Hwy 1, Grand Pre
- Top Producing Unpublishable Herd in NS

Q1: TELL US ABOUT THE HISTORY OF YOUR FARM AND HOW YOU GOT TO WHERE YOU ARE TODAY.

Jon: "I bought this farm from Herman Mentink seven years ago and now co-own it with my nephew, John Francis. It was an organic farm with 400 acres with half of the acreage owned by the herdsman, so when I bought it, I received only 200 acres with it. This is not a lot of land, so we must operate things very efficiently. Not only are we limited by land base that was sold with the farm, we sit in the middle of wine country so we are restricted by the land available for purchase as well. The facilities were very dated, so we knew we had to upgrade. We saw robots operating in Holland twelve years ago and started planning for expansion when we completed the sale. We

completed the new 64-stall, free-stall robot barn (De Laval) in October 2015 with one robot because this is all we could handle with the land base we had."

Q2: WHAT MANAGEMENT PRACTICES DO YOU BELIEVE CONTRIBUTE TO YOU HAVING ONE OF THE TOP PERFORMING HERD IN NS?

Jon: "Because we are a small herd size with limited or no option to expand, and with the quota increases we were given over the past two years, we want to ensure we are pushing the robot, putting through as many cows as we can, while getting as efficient as we can. We started with 50 cows per day and are currently milking 61 (as many as 63) cows, but we want to get to 65 cows at 2.8 milkings per cow per day, consistently. This means we need to focus on the efficiency of getting as many cows through the robot as possible. We do not look as much at production per cow, as we do maximizing production from the robot. We have been producing 100 kg of butterfat per day consistently from the robot for months now. We are constantly looking at the numbers coming off the robot and cows that are taking too much per milking do not stay around very long, regardless of her production and how beautiful she is. Obviously, there is a balance but we take everything into consideration to optimize output and we need accurate data to do this. We are constantly tweaking parameters like this and have reduced average milking time per cow from 7.40 minutes to 6.55 which provides significant additional time to optimize the cow numbers we can put through. This is huge for us. We make breeding and culling decisions based on production and component data. Fifty percent of the milking herd is bred to beef semen and ninety percent of the heifers are bred to sexed semen. Our main area of focus is animal health when it comes to our calves, heifers and dry cows. Attention to detail with these animals is critical. We want consistency - every animal to be treated the same - and, therefore, SOP's/data/records are critical. We believe that how the lactating cows perform is influenced significantly by the health, treatment and performance of the calves, heifers and dry cows. We aim to adequately prepare every animal that moves into the milking string, for maximum performance. You need to set the stage. In a robot barn, you can only do so much with the milking cows. It is like they are the owners and we give them their space to do their thing. We equip them with what they need – genetics, feed and comfort. It is up to them what they do with it."

> Because we are a small herd size with limited or no option to expand, and with the quota increases we were given over the past two years, we want to ensure we are pushing the robot, putting through as many cows as we can.

Q3: WHAT ARE YOUR GOALS GOING FORWARD?

Jon: "Our goal is to constantly produce 100 kg per day from the robot with 65 cows so that there is more room to breed and cull, leaving us with a "full-bench of players" to choose from. If we can fill quota completely by maximizing cow numbers and production, we will have a full sleeve that will enable us to manage components when necessary, thus reducing feed costs and get even more efficient per cow."

Q4: WHY ARE YOU A VALACTA CUSTOMER AND HOW HAS VALACTA HELPED YOU REACH YOUR GOALS?

Jon: "Official records are not important to us. We want as much accurate data as we can gather to better manage our herd. As an AMS farm, we have tons of data, 24-7. Valacta complements the data we get daily from the robot because we get components on individual cows. To get 100 kg of milk out of 60 cows consistently and sustainably, we must have analytics, kg of fat, kg of protein, milking speed and milking time are examples of key numbers we want to benchmark all the time. How do you make decisions without data? I am not sure - gut feeling? Valacta has stepped up their game and demonstrated to me that they will continue to offer value-added, relevant services to dairy farmers. For example, TCI® is an index I believe in and use to manage/monitor my dry cow program. The recent introduction of Valacta robot-specific reports is another example of a tool that is meeting the changing needs of dairy farmers. The advisory services now being offered have been a huge leap forward in helping interpret the powerful Valacta reports. This is the time of analytics, whether we are talking baseball, elections, etc. Measuring performance and getting better through analytics is the new norm. If you are running a multi-million dollar operation on your gut or intuition, you are going to have challenges. This is 2018! My hope is also that the industry becomes more integrated. Organizations like Valacta, Holstein Canada and CDN need to be more integrated. The newly announced partnership with CanWest DHI, CDN and Valacta is a great first step. My belief is that the future success of the industry is hinged on data mining and analytics – period."

IS **ROBOTIC MILKING** FOR ME? A FEW ASPECTS TO CONSIDER

BY GERVAIS BISSON, AGR., DAIRY PRODUCTION EXPERT - MILKING ROBOTS, R&D, VALACTA.

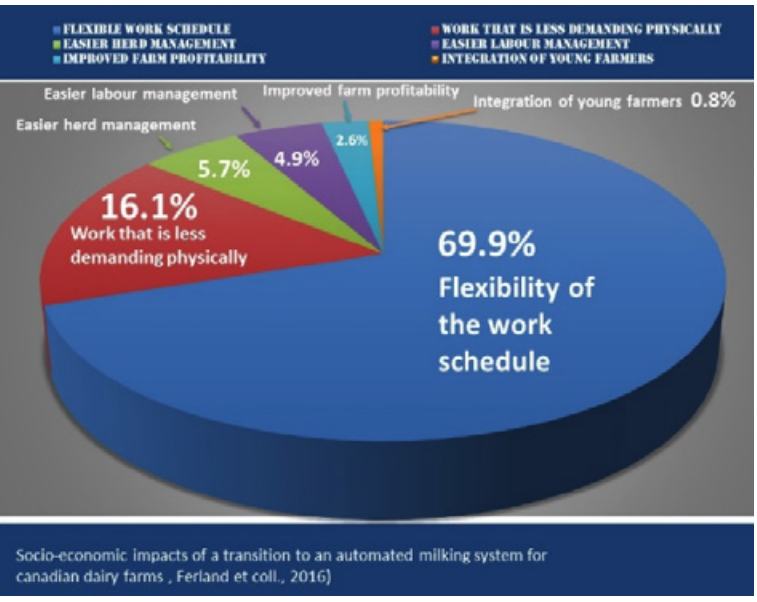
More and more dairy farms are using a robotic milking system, but most dairy producers will eventually consider making the switch, if they haven't already made the transition.

ADVANTAGES OF ROBOTIC MILKING

While robotic milking has a number of advantages, not all of them generate revenues that go directly towards reimbursing one's loans. What is the actual value given to quality of life, flexible work schedules and work that is less demanding physically? Those are the key motivating factors that emerge whenever we talk to farmers who are thinking of installing a milking robot, and for good reason. In a Canadian study conducted by Ferland et coll., in 2016, 213 dairy owners currently using robotic milking were asked which aspect gave them the greatest satisfaction. Better quality of life was the response given by 88% of them. The same producers were also asked what they thought was the main advantage of switching to robotic milking (see Figure 1).

> The top two advantages identified by producers were a flexible work schedule and work that is less physically demanding.

FIGURE 1: ADVANTAGES OF ROBOTIC MILKING



Socio-economic impacts of a transition to an automated milking system for canadian dairy farms , Ferland et coll., 2016)

The top two advantages identified by producers were a flexible work schedule and work that is less physically demanding. Those two factors alone accounted for 86% of the responses provided, and although it is difficult to quantify their value, a flexible work schedule was by far the most frequently mentioned benefit.

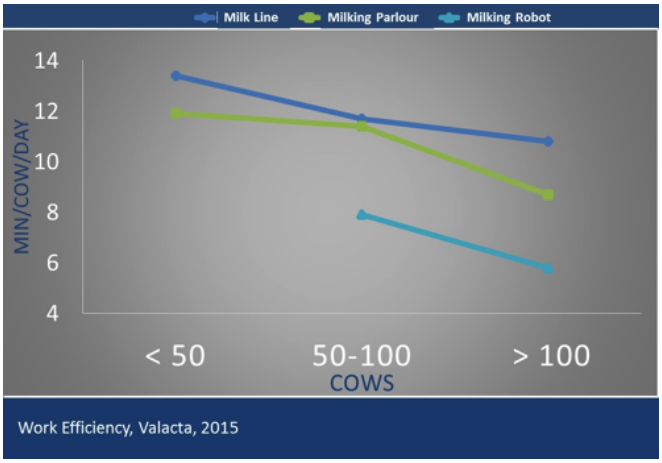
WHAT ABOUT THE DREADED ALARMS?

As it is often the case, greater benefits may mean putting up with some inconveniences. Although robotic milking allows more freedom to organize one's time, it also requires that someone be available 24 hours a day, 365 days a year, in case any problems arise with the milking robot. The experimental farm in Derval, France, published a report last year on the use of its milking robot since its installation in 2008. The report indicated that, on average, the alarm went off during the night (between 7 pm and 6 am) once every 11 days, and that the problems were corrected within 5 to 10 minutes. So you will need to factor in your tolerance for this type of situation when considering your options.

WORK EFFICIENCY

How does the work time in robotic barns compare to that in barns with a milking parlour or milk line? In this context, work time refers to routine tasks such as milking the cows, feeding the cows, calves and heifers, and tending to herd health and management. These tasks take three minutes less time in a robotic-milking dairy farm than in a milking parlour, and five minutes less than in a traditional barn equipped with a milk line. Figure 2 shows work efficiency for each type of milking system based on a 2015 Valacta study.

FIGURE 2: WORK EFFICIENCY BY MILKING SYSTEM



Work Efficiency, Valacta, 2015

PRODUCTION

The study by Ferland *et al.*, reported a 737-kg increase in milk production in the 18 month-period following the last milk test prior to the robot milking start-up. Production varied from 10,027 kg to 10,764 kg. The 65 Quebec farms who participated in the study all showed an increase of similar magnitude, that is, 720 kg. Nonetheless, production varied widely between farms: 20% showed a drop in production (an average of 577 kg), 10% showed no change, and 70% showed an increase in production (an average of 1,195 kg). These findings emphasize the importance of adequate preparation to avoid any missteps during start up. Moreover, as many automatic milking systems are installed in new or refurbished buildings, it is important to mention that part of the production increase is likely attributable to improved cow comfort.

COSTS TO KEEP IN MIND

Table 1 presents the average annual maintenance costs for different milking systems used to milk 60 cows. Overall, if we compare all milking systems, it costs $5,000 more per year to maintain a milking robot. Costs vary from one farm to another however. Average feeding costs with robotic milking are $0.39/hL higher than with the other two milking systems (Valacta, June 30th, 2016), amounting to $2,100 more per year.

THINKING OF EXPANDING?

With a robotic milking system, time is the limiting factor. There are only so many milkings that can be done and so many cows that can be milked in a day. However, it is important to optimize the use of the milking robot before considering adding a second one. Some farms are currently producing over 80 kg of fat per day per robot.

Hence there are a number of factors that must be taken into account when considering making the move to robotic milking, and it is not simply a matter of money. One thing is certain, producers using a robotic milking system must increase production if they want to ensure a return on their investment. Discuss your plans with your Valacta advisor or technician. They can refer you to our specialized resources to help you organize your project, no matter where you are in your planning.

TABLE 1 – ANNUAL MAINTENANCE COSTS BY MILKING SYSTEM

	MILK LINE	MILKING PARLOUR	MILKING ROBOT
Maintenance costs ($/year)	2,500	2,500	7,500

Source: Fournier and Beauregard, 2014

WHY IS **PROPER FORAGE** SAMPLING SO IMPORTANT?

BY ROBERT BERTHIAUME, AGR., FORAGE SYSTEMS EXPERT, AND JULIE BAILLARGEON, AGR., TECHNOLOGY TRANSFER AND RESEARCH PROJECT COORDINATOR, R&D, VALACTA

The feed value of a forage sample can be determined through laboratory analysis. But if the results of the analysis deviate too far from the actual composition of the forages that are fed to the cows, the ration will not be properly balanced and production will suffer as a result. So why would the results of the analysis differ from the real values? Analytical error or sampling error?

That is the question that Ohio State University researchers Normand St-Pierre and Bill Weiss sought to answer in a study published in 2015. To conduct their project, they asked nutritionists to sample grass and corn silages from 11 different farms, once a day for 14 consecutive days. One person on each farm was trained to take the samples. The forages were stored in various types of silos: vertical (2 farms), silage bags (4 farms), and horizontal (11 farms). The sample takers were required to adhere to a strict protocol, following the prescribed sampling procedure, to supply two separate samples, taken the same day. All the samples were then sent to the same laboratory and analyzed twice.

TABLE 1. PERCENTAGE OF THE VARIATION IN THE COMPOSITION OF CORN AND GRASS SILAGES ATTRIBUTABLE TO SAMPLING AND ANALYSIS[1]

% of the variation Component	Sampling	Analysis
CORN SILAGE		
Dry matter	29	24
NDF	51	15
Starch	65	10
Ash	80	2
GRASS SILAGE		
Dry matter	31	5
NDF	44	9
Crude protein	59	15
Ash	75	2

[1] Samples taken daily on 11 farms for 14 consecutive days (St-Pierre and Weiss, 2015).

ANALYTICAL ERROR OR SAMPLING ERROR?

Based on the results presented in Table 1, it seems clear that most of the variation is related to sampling, and this is true for both types of silage. The variation associated with laboratory analysis is generally low (< 15%), except in the case of corn silage dry matter (DM). This exception is most likely due to the difficulty of subsampling the corn silage when it arrives in the laboratory, on account of the wide variation in the chemical composition of the different plant parts (kernels, cobs, stems, leaves). In other words, if the subsample contains too much or too little grain, the results will be skewed.

TABLE 2. SAMPLING RECOMMENDATIONS FOR FEEDS CONTAINED IN A TMR

Variation between farms	Feed	Recommendations
Feeds that vary considerably between farms	Corn silage Grass silage High-moisture grain corn Wet corn gluten feed Wet distillers' grains	Take a number of samples, more frequently: >100 cows = 2 samples taken the same day, monthly. <100 cows = 2 samples taken the same day, at every batch change.
Feeds that vary little between farms	Dry grain corn Dry cereals Soybean meal Canola meal Corn gluten meal	Take one sample per batch (season)
Feeds that vary with the source	Distillers' grains Heated soybeans Farm-pressed soybean meal	Take one sample per batch

The study results confirm that the sampling method is the main factor at play in the variation between the results of a sample analysis and the actual forage values.

MORE SAMPLES FOR LESS VARIATION?

One would think that increasing the number of samples and analyses for a single forage would produce more consistent results. When the researchers verified this assumption, however, they found that this approach did not substantially iron out the peaks and valleys in the results of the dry matter analysis over the 14 days of sampling.

In the case of starch, on the other hand, taking two samples and analyzing each of them twice did lead to a marked reduction in the variation related to sampling. Because starch content is a decisive factor in the calculation of the amount of energy provided by a silage, this could significantly affect the quantities of concentrates to be added or the milk production.

RECOMMENDATIONS

It is important to know the exact forage composition to correctly balance the rations and avoid reduced milk production. The study by St-Pierre and Weiss shows that a variation exceeding 5 percent can lead to a drop in production of up to 2 L/cow/day! A significant loss, no matter how you do the math...

The objective is thus to make the best use of laboratory results to avoid making costly mistakes and, at the same time, ensure that forage analysis remains affordable. The first priority is to be meticulous and adhere to the sampling protocols. Next, it is important to target the feeds with the greatest variation from one farm to the next so that the analysis accurately reflects the composition of the feed that goes into the ration. Lastly, there is no point in repeatedly analyzing highly homogenous feeds that are stored dry (such as dry hay) and are often included in a TMR. Table 2 provides a summary of these recommendations.

Watch our videos on Sampling Techniques

Please click on the picture

Vertical Silos

Horizontal Silos

Large Bales

BENCHMARKS

MILKING ROBOTS – PREDOMINANT BREED HOLSTEIN – DECEMBER 31st, 2017

	ATLANTIC		QUEBEC		ONTARIO		WEST		CANADA	
	Robot	Total[1]	Robot	Total[1]	Robot	Total[1]	Robot	Total[1]	Robot	Total[1]
Number of herds	26	311	246	3609	230	2448	142	856	644	7224
Number of cows per herd	100.8	101.7	96.1	69.5	108.8	88.9	143.1	167.0	111.2	89.0
Annual milk (kg/cow/year)	10,481	9,586	10,291	9,689	10,616	9,841	10,725	10,213	10,511	9,798
Annual fat (kg/cow/year)	422	385	409	390	419	392	412	403	414	392
Annual fat (%)	4.03	4.02	3.98	4.03	3.95	3.99	3.84	3.94	3.94	4.00
Annual protein (kg/cow/year)	346	310	339	321	347	320	349	331	345	321
Annual protein (%)	3.30	3.24	3.30	3.31	3.28	3.26	3.25	3.24	3.28	3.28
305-day milk (kg)	10,440	9,694	10,232	9,767	10,724	10,063	10,874	10,425	10,558	9,942
305-day fat (kg)	407	383	400	387	415	393	411	406	409	391
305-day fat (%)	3.90	3.95	3.91	3.97	3.87	3.91	3.78	3.89	3.87	3.94
305-day protein (kg)	336	309	333	318	345	322	349	334	342	321
305-day protein (%)	3.22	3.19	3.26	3.26	3.22	3.20	3.21	3.21	3.23	3.23
Days at peak	48	44	46	44	49	45	58	55	50	46
Peak milk (kg)	43.0	38.8	41.4	39.1	42.2	39.2	43.0	41.1	42.1	39.3
Lactation persistency	96	98	96	96	97	97	99	98	97	97
Transition Cow Index®	449	157	376	213					383	208
Longevity (% 3rd lactation plus)	38.4	39.8	39.0	41.5	36.3	37.1	34.9	35.0	37.1	39.1
Age at 1st calving (mo.)	25.5	26.9	25.3	25.9	25.1	25.8	25.7	25.7	25.3	25.9
Herd age at calving (mo.)	43.9	47.7	44.8	47.1	43.3	44.9	43.6	43.7	44.0	46.0
Herd turnover (%)	33.3	32.9	31.4	31.8	34.8	36.4	35.7	36.8	33.7	34.0
Mortality (%)	4.0	3.7	4.8	4.7	4.8	5.1	7.1	6.9	5.3	5.1
Disposal for feet/legs (%)	2.7	2.8	3.1	2.6	2.0	1.9	2.5	2.3	2.6	2.4
Disposal for reproduction (%)	6.0	6.3	4.7	5.6	5.7	6.8	5.4	5.8	5.3	6.0
Disposal for mastitis/high SCC (%)	4.2	4.1	3.4	4.0	2.7	3.6	3.7	3.7	3.3	3.8
Sold for milk production (%)	5.5	4.9	2.6	3.1	5.8	6.7	4.0	5.6	4.2	4.7
Calving interval (days)	414	423	407	416	411	423	423	423	412	419
Days to 1st breeding	82.7	85.5	73.7	75.9	80.7	80.0	90.5	87.8	80.3	79.1
Days dry	69.2	69.4	62.4	62.6	66.3	67.2	70.2	72.7	65.8	65.6
Annual SCC ('000/ml)	217	227	211	222	237	245	233	216	225	229
Milk value ($)	7,471	6,829	7,272	6,965	7,557	7,112	7,507	7,341	7,459	7,066
Herds with feed	1	41	44	920					45	961
Annual feed cost ($)		2,210	2,413	2,295					2,405	2,292
Margin over feed cost ($)		4,372	4,858	4,649					4,880	4,638
Feed cost ($/hl)		24.98	24.90	24.65					24.79	24.66

[1] *Number of herds with a known milking system.*

There is big money involved in dairy production planning!

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or call 1-800-266-5248

What does it do for you?

- Keep track of pregnancies, animals entering or leaving the herd, and the true output from your cows.
- Get a precise estimate of total milk production in the coming months.
- An ideal way to anticipate problems and find solutions before they arise.
- A flexible tool to help you to optimize the use of quota over the course of the year.

Dairy production planning is like driving a car!

You keep your eyes on the road a good distance ahead of you and you make frequent small adjustments instead of making sharp turns, accelerating at the last minute and slamming on the brakes. All things considered, it's less stressful, much safer and somewhat easier on the pocketbook!

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COLLECTING HOOF HEALTH DATA GIVES **PROMISING RESULTS**!

BY ANNE-MARIE CHRISTEN, PROJECT MANAGER, AND RENÉ LACROIX, ANALYST – DATA VALUE, R&D, VALACTA; AND ANDRÉ DESROCHERS AND SIMON DUFOUR, DVM, PROFESSORS, FACULTY OF VETERINARY MEDICINE, UNIVERSITY OF MONTREAL

"Hi Ray!" "Hey Paul! I'll just finish up what I'm doing here while you bring in your chute. I'll be with you in a few minutes." Paul has come to do the hoof trimming at Sunny Valley Farm. Paul is a hoof trimmer and makes a point of using his Hoof Supervisor System (HSS) for his trimming visits. Once a week, he connects to Valacta's Vision2000 database and downloads the cow lists for the clients he'll see in the coming week to put together his trimming lists.

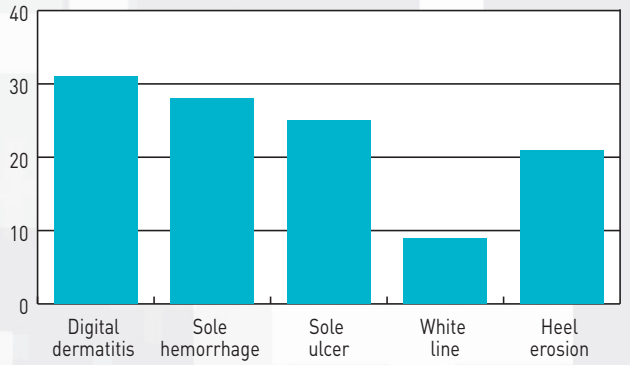
Paul and Ray recognize the importance of collecting the data on feet. Since they started nearly three years ago, they were able to measure the progress at the farm and now there is enough information to know more about the situation. "I am ready Ray! Let's get started!" After each trimming, Paul enters his observations into his computer. When he notices a problem, he identifies the claw, the affected area, the type of lesion and the severity. Data entry only takes a few seconds per cow.

TO IMPROVE, YOU HAVE TO KNOW WHERE YOU'RE STARTING FROM

Paul just received information on the results of the data collection. "So Paul, what did you learn?" Paul explains that 74 percent of cows in tie-stall barns are lesion-free, compared to 55 percent in free-stall housing, whether they're milked with robots or in a milking parlour. Figure 1 presents the most commonly observed feet problems in Canadian herds where data is collected.

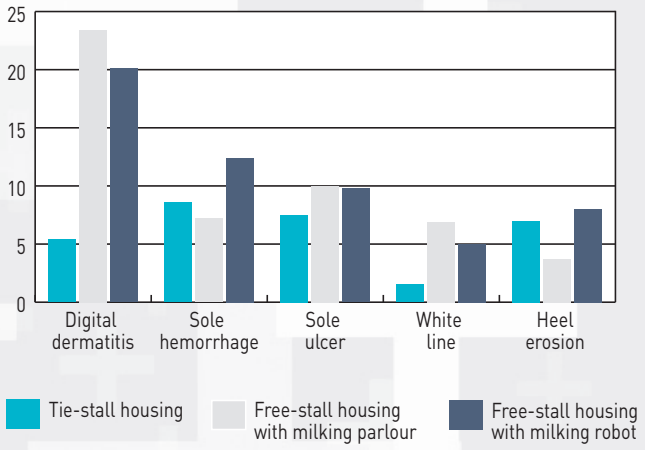
The Individual Cow report provides the details for each cow in the herd.

FIGURE 1. THE FIVE MOST COMMON LESIONS RECORDED IN PARTICIPATING HERDS (%)*



*Number of herds: Quebec: 560; Ontario: 47; New Brunswick: 2; Manitoba: 9.

FIGURE 2: PREVALENCE (%) OF THE FIVE MOST COMMON LESIONS BY HOUSING AND MILKING SYSTEM



According to the results, manually scraping and cleaning stalls more than five time a day is associated with a significant reduction in sole hemorrhages and ulcers.

One of the graphs that caught Paul's attention showed the distribution of the different types of lesions in relation to housing and milking system (Figure 2). As an example, the incidence of digital dermatitis is higher in free-stall housing systems. "I always stress the importance of footbaths for those producers and, ideally, they should be 10 to 12 feet long. Because digital dermatitis is contagious, prevention and persistency are the best practices in order to eliminate the problem in your herd."

IT PAYS TO SHARE DATA!

Once he is done with the trimming, Paul can either print the two main reports on-site with a printer or give them to Ray on a USB key (Photo 1). He also reviews the results with Ray and his veterinarian, to see if the last intervention protocol gave the outcome they were hoping for. Based on the data that Paul collected and the HSS reports, they're now able to assess the results of the measures they've implemented.

At week's end, Paul reconnects to the Vision2000 database and uploads the trimming data for the herds he has visited. Valacta relays this data to the Canadian Dairy Network on a regular basis for genetic evaluation.

A QUESTIONNAIRE ON MANAGEMENT PRACTICES IN THE BARN

Eighty-five farms were surveyed where hoof trimmers are collecting data on lesions. The producers had to answer 45 questions about management practices in the barn. The questions focused on:

- Type of housing and access to the outdoors (pasture, exercise yard);
- Stall flooring (mats, mattresses, type of bedding);
- Cleaning and manual manure scraping, adding bedding;
- Prevention of hoof diseases (use of drying agents, hoof trimming frequency, footbaths and products used);

Among those farms, 72 were tie-stall operations (11,755 cows) and 13 have free-stall barns (5,912 cows). Results showed that cows housed in free stalls were 1.6 times more likely to develop a lesion than those in tie stalls, and this was due mainly to digital dermatitis, a contagious disease that occurs more frequently in free-stall housing.

WHAT PRACTICES ARE BENEFICIAL?

Manually scraping stalls and adding bedding in tie-stall barns

"Ray, you should know that the most valuable tool you have in the barn for improving hoof health is your manure scraper!" "Really!?" According to the results, manually scraping and cleaning stalls more than five time a day is associated with a significant reduction in sole hemorrhages and ulcers. The benefit appears to be primarily due to the fact that the bedding is replaced under the animal during the scraping operation, increasing the softness of the stall floor. Adding bedding was found to be particularly effective for decreasing the incidence of sole hemorrhages. The results show that 75 percent of the farms surveyed add bedding to their stalls at least twice a day.

Paul The Trimmer
Hoof Supervisor System
Individual Cow Report

10/1/2017 - 10/31/2017
Des Grands Vents Farm

3470 (10/11/2017)	Routine						
3471 (10/11/2017)	Routine	LF	Medial	7	(C) - Corkscrew Claw	1	
		LF	Medial	4	(H) - Sole Hemorrhage	1	
		LF	Medial	2	(Y) - White Line Hemorrhage	1	
		RF	Medial	7	(C) - Corkscrew Claw	1	
		RF	Medial	4	(H) - Sole Hemorrhage	1	
		RF	Medial	2	(Z) - Thin Sole	1	
3483 (10/11/2017)	Routine						
3505 (10/11/2017)	Routine						
3508 (10/11/2017)	Routine	LR	Lateral	3	(W) - White Line Lesion	1	
3520 (10/11/2017)	Routine	LR		10	(I) - Interdigital Dermatitis	1	
		LR					Treatment
		RR		10	(D) - Digital Dermatitis	M1	
		RR					Treatment
3542 (10/11/2017)	Routine						
3543 (10/11/2017)	Routine	LR	Lateral	11	(X) - Axial Fissure	2	
		LR					Block
3545 (10/11/2017)	Routine	RR	Medial	11	(X) - Axial Fissure	2	
		RR	Medial	5	(T) - Toe Ulcer	1	
3571 (10/11/2017)	Routine	LR	Lateral	5	(Z) - Thin Sole	2	
		LR	Lateral	1	(T) - Toe Ulcer	1	
		LR					Block

Page 5 of 7

Ray always shares his Individual Cow Report with his veterinarian. Together, they look at the lesions and evaluate the success of their hoof health strategy and treatments. When time allows, Paul is there too and knows what to do at the next visit.

Drying agents

"You were wondering the other day if using limestone in your stalls would be good for hoof health?" "Yeah, and with my vet, we decided to try it out!" Based on the study, the use of limestone or a drying agent in stalls is beneficial: the practice generally tends to reduce the percentage of lesions in the herd, with the exception of certain types, such as sole hemorrhage and white line lesions.

Access to an exercise yard

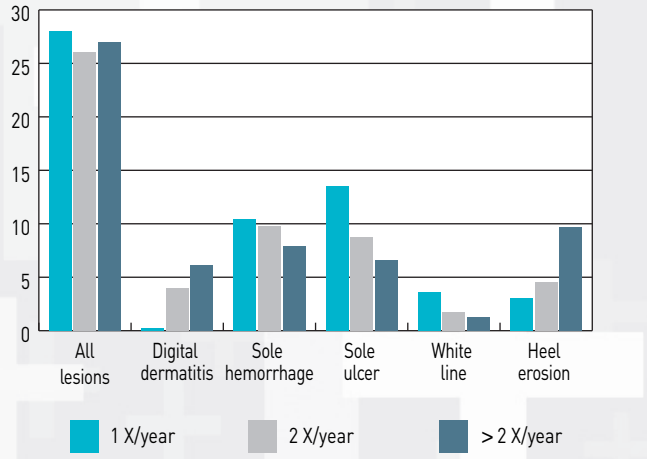
Access to the outdoors (pasture or exercise yard), also has an overall beneficial impact on lesion reduction in tie-stall barns. The effect is significant for both digital dermatitis and white line lesions. Is this due to softer ground, reduced infection pressure? Additional data and observations are needed to fully explain the benefit.

More frequent trimming would benefit hoof health

"I don't want to sound self-serving, Ray, but the results of the project show that more frequent trimming is really good for hoof health! Especially for reducing problems like sole hemorrhages. You're not done with me yet, Ray!" Although the results show that digital dermatitis and heel erosion increase with trimming frequency (Figure 3), it should not be inferred that trimming frequency is connected to these types of lesions. Because they are contagious and difficult to treat, it's normal that hoof trimmers see these cows at every trimming visit.

"These are positive results, Paul! Until now, we didn't have much to rely on. From now on, I'll scrape more often, add more bedding and keep using limestone, and I'll even get you to come more often, Paul! I'll just have to add some exercise... It's hard to get it all right, you know! I certainly want my cows to be comfortable!"

FIGURE 3. EFFECT OF THE NUMBER OF TRIMMINGS PER YEAR ON HOOF LESION PREVALENCE



THE FUTURE

This centralized database enables us to better understand the hoof health situation in Canada. In 2018, a foot health benchmarking report will be made available through the milk recording programme to producers who contribute data. This report will make it possible to compare herds with similar management. Since December 2017, CDN offers a new genetic evaluation for digital dermatitis, exclusive to the Holstein breed.

Results achieved through a project funded by Agriculture and Agri-Food Canada and the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec under the Programme de soutien aux stratégies sectorielles de développement 2.

Agriculture and Agri-Food Canada
Agriculture, Pêcheries et Alimentation Québec

PROVINCIAL 305-DAY PRODUCTION AVERAGE

Province & Service Level	Herds	Milk (kg)	Fat (kg)	Protein (kg)	BCA M	BCA F	BCA P	Avg BCA
NEW BRUNSWICK								
Publishable	89	9,269	372	298	212	220	211	214.4
All	120	9,032	361	291	207	214	206	209.1
NOVA SCOTIA								
Publishable	102	9,951	396	321	223	234	224	226.7
All	127	9,782	386	315	219	228	220	222.2
PRINCE EDWARD ISLAND								
Publishable	74	9,965	397	316	221	237	221	226.5
All	95	9,808	395	311	218	235	217	223.3
NEWFOUNDLAND								
Publishable	6	10,548	445	340	232	265	235	244.0
All	7	9,921	412	319	218	244	220	227.5

* For AY, HO and JE breeds a minimum of 10 publishable lactations is required for a publishable herd average - all other breeds require 5.

ANNUAL PROVINCIAL HERD DEMOGRAPHICS - ALL HERDS

Herd Size (Cows)	% Herds	% Animals	Annual Average Herd Size	Annual Milk Production	Annual Fat Production		Annual Protein Production		Annual Average SCC ('000/ml)
					(kg)	(%)	(kg)	(%)	
NEW BRUNSWICK									
1-39	6.9	1.8	27	6,699	306	4.6	233	3.49	205
40-79	42.2	24.1	58	8,647	343	3.98	276	3.2	220
80-119	25.9	24.5	96	8,996	354	3.93	286	3.18	227
120+	25.0	49.5	201	10,090	410	4.06	325	3.22	222
NOVA SCOTIA									
1-39	6.3	1.5	24	7,919	322	4.1	261	3.32	249
40-79	51.6	30.1	57	9,040	362	4	297	3.3	254
80-119	24.2	24.6	98	10,085	399	3.95	326	3.24	246
120+	18.0	43.8	236	11,021	446	4.05	356	3.23	201
PRINCE EDWARD ISLAND									
1-39	4.3	1.5	31	7,612	321	4.22	250	3.27	236
40-79	51.1	32.3	58	9,273	375	4.04	299	3.23	210
80-119	22.8	22.9	92	9,759	411	4.2	316	3.24	209
120+	21.7	43.3	182	10,674	434	4.08	344	3.22	200

QUEBEC HOLSTEIN HERD STATISTICS BASED ON MILK PRODUCTION + FEED EFFICIENCY

Production (20% ranking)	0-20	21-40	41-60	61-80	81-100	Total/ Ave
Number of herds	705	704	704	704	704	3,521
Number of cows in the herd	56.0	63.2	68.1	73.8	83.7	69.0
Milk (kg/cow/year)	7,766	9,132	9,795	10,423	11,500	9,723
Butterfat (kg/cow/year)	315	370	395	418	460	392
Butterfat (%)	4.05	4.05	4.03	4.01	4.00	4.03
Protein (kg/cow/year)	257	303	325	345	378	322
Protein (%)	3.31	3.32	3.32	3.31	3.29	3.31
SCC ('000 c.s./ml)	266	229	219	205	196	223
Linear score	2.9	2.6	2.5	2.4	2.4	2.6
Corrected milk (kg/cow/day)	28.6	33.0	35.1	37.1	40.7	34.9
Culling (%)	31.9	30.9	31.0	31.4	33.7	31.8
Voluntary cull (%)	4.8	4.2	5.0	5.4	8.6	5.6
Involuntary cull (%)	17.8	19.0	18.7	18.6	18.1	18.4
Cows in lactation (%)	86.6	87.2	87.5	87.5	87.7	87.3
3rd lactation plus (%)	42.1	41.8	41.6	41.1	40.5	41.4
Average age (yr-month)	4-1	3-11	3-10	3-9	3-9	3-11
Average bodyweight (kg)	656	671	677	682	695	678
Age at 1st calving (months)	27.4	26.1	25.6	25.2	24.9	25.8
Bodyweight at 1st calving (kg)	607	619	625	632	644	627
Calving interval (days)	433	417	413	411	408	416
Days in milk at 1st breeding	83	76	75	74	76	77
Breeding/cow/year	2.21	2.32	2.30	2.37	2.35	2.31
Days dry	65	63	62	62	62	63
Days open	153	137	133	131	128	136
Milk value ($/cow/year)	5,704	6,587	6,995	7,414	8,147	6,969
Margin over feed cost ($/cow/year)	3,716	4,330	4,641	5,019	5,614	4,664
Feed cost ($/hl)	26.47	24.92	24.39	23.56	22.89	24.45
Forage cost ($/cow/day)	2.84	2.99	3.02	3.20	3.19	3.05
Concentrates cost ($/cow/day)	2.69	2.93	3.14	3.16	3.57	3.10
Minerals, vitamins and additives cost ($/cow/day)	0.26	0.30	0.30	0.29	0.30	0.29
Forage milk (kg/cow/an)	2,857	3,445	3,696	4,255	4,464	3,784
Forage (kg dry matter/cow/year)	4,978	5,273	5,402	5,720	5,809	5,436
Concentrates (kg dry matter/cow/year)	2,339	2,491	2,629	2,563	2,749	2,554
Total dry matter intake (kg/cow/year)	7,317	7,764	8,031	8,283	8,557	7,990
Energy supplement (kg dry matter/cow/year)	1,872	1,862	1,915	1,797	1,880	1,865
Protein supplement (kg dry matter/cow/year)	467	630	714	766	869	689
Feed efficiency	1.12	1.20	1.24	1.28	1.35	1.24
Standard milk/concentrates ratio	3.10	3.31	3.30	3.59	3.77	3.41
Concentrates costs ($/hl)	13.40	12.91	12.98	12.17	12.52	12.79
Milk value ($/hl)	74.39	74.05	73.69	73.50	73.30	73.79
Margin over feed cost ($/hl)	47.92	49.13	49.30	49.94	50.41	49.34
Margin over feed cost ($/kg butterfat)	11.46	11.81	11.88	12.06	12.21	11.88

ATLANTIC HOLSTEIN HERD STATISTICS BASED ON MILK PRODUCTION LEVEL (AVERAGE BY 20% MILK PRODUCTION GROUPS)

Milk Production (20% Ranking)	0-20	21-40	41-60	61-80	81-100	Total/ Ave
Number of herds	60	60	60	60	61	301
Number of cows in the herd	72.3	79.5	84.9	131.3	143.9	102.7
Milk (kg/cow/year)	7,401	8,779	9,702	10,484	11,765	9,648
Butterfat (kg/cow/year)	293	351	390	425	475	388
Butterfat (%)	3.95	4.00	4.02	4.05	4.04	4.01
Protein (kg/cow/year)	240	285	313	339	378	312
Protein (%)	3.24	3.24	3.23	3.23	3.21	3.23
SCC ('000 c.s./ml)	274	233	224	212	186	226
Linear score	2.8	2.6	2.6	2.5	2.4	2.6
Corrected milk[1] (kg/cow/day)	27.3	32.0	34.7	37.3	41.6	34.6
Culling (%)	33.2	33.8	30.6	32.6	33.8	32.8
Voluntary cull[2] (%)	7.3	8.0	6.6	7.2	7.8	7.4
Involuntary cull[2] (%)	20.7	22.7	19.9	21.2	20.7	21.0
Cows in lactation (%)	84.9	85.1	85.7	86.8	86.7	85.8
3rd lactation plus (%)	39.6	39.5	40.8	39.2	38.9	39.6
Average age (yr-month)	4-3	4-0	4-0	3-9	3-8	3-11
Age at 1st calving (months)	29.6	27.5	26.8	25.7	25.0	26.9
Calving interval (days)	444	436	423	413	404	424
Days in milk at 1st breeding	100	87	86	81	78	86
Breeding/cow/year	1.88	2.03	2.13	2.10	2.04	2.04
Days dry	75	74	69	68	66	70
Days open	164	156	143	133	124	144
Milk value ($/cow/year)	5,229	6,251	6,899	7,488	8,381	6,865

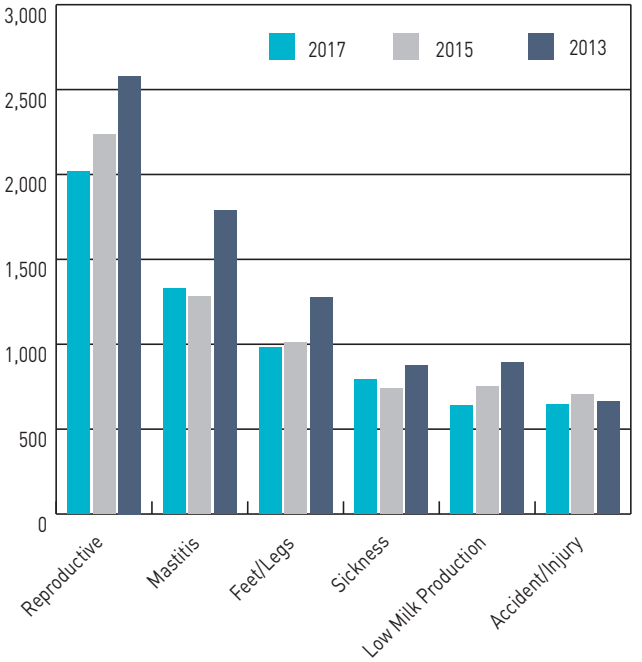
[1] Corrected milk is ajusted to 2nd lactation, 150 days in milk, 4.0% fat and 3.35% protein.
[2] The category of OTHER is excluded from this field

MANAGEMENT CENTER BENCHMARKS

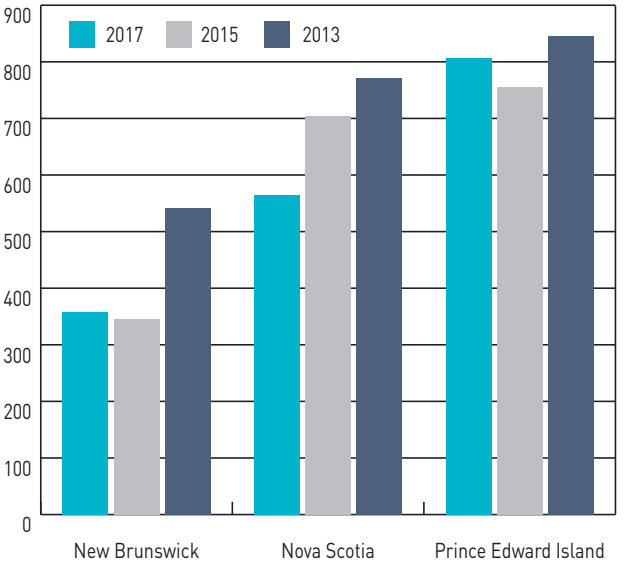
Measure	New Brunswick Percentile				Nova Scotia Percentile				Prince Edward Island Percentile				Newfoundland Percentile			
	25th	50th	75th	90th	25th	50th	75th	90th	25th	50th	75th	90th	25th	50th	75th	90th
Annual Milk Value ($)	5,554	6,209	7,191	8,077	6,000	6,935	7,688	8,551	6,185	6,817	7,556	8,059	6,977	8,176	9,513	10,163
Somatic Cell Count ('000/ml)	352	262	213	157	347	286	234	185	311	250	194	157	325	290	237	144
Udder Health (SCC Linear Score)	2.2	2.6	2.9	3.2	3.1	2.9	2.6	2.3	3.1	2.9	2.5	2.2	3.1	2.8	2.5	2.2
Age at 1st Calving (Year-Month)	2-6	2-5	2-2	2-0	2-6	2-4	2-2	2-0	2-6	2-4	2-2	2-1	2-2	2-2	2-1	2-0
Calving Interval (months)	14.7	14.1	13.4	13.1	15.1	14.4	13.6	13.1	15.1	14.0	14.5	13.3	13.0	13.3	13.8	14.8
Longevity (% of herd in 3+lactation)	36	42	48	54	35	41	52	52	33	37	43	50	29	37	41	47
Herd Efficiency (% of herd in milk)	85	87	89	90	84	86	88	90	83	86	88	90	83	84	87	90
Herd Turnover (% of herd in removed)	39	34	30	22	44	37	31	25	50	40	34	26	40	39	31	18
Number of Cows	53	76	119	148	50	67	103	156	53	72	102	147	104	159	212	231
Management Milk (kg)*	29	32	37	40	31	34	39	42	33	35	38	141	30	37	40	42
Days Dry	78	72	61	57	92	75	64	59	100	90	70	59	80	73	67	57
Days to 1st Breeding	104	92	81	74	112	95	83	74	115	95	81	70	81	76	74	69

* Management Milk measure: brings age, stage of lactation and energy-corrected milk to a standard number for comparison purposes.

TOP DISPOSAL REASONS ALL PROVINCES



LIVE CATTLE MOVEMENT



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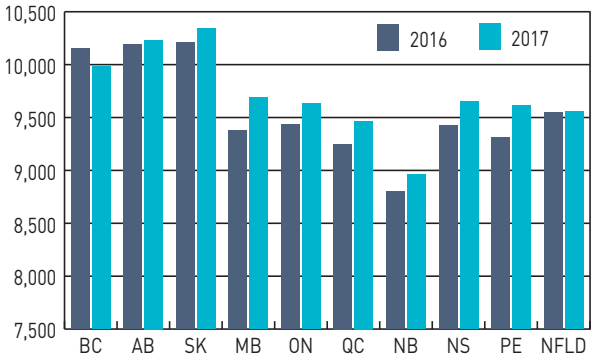
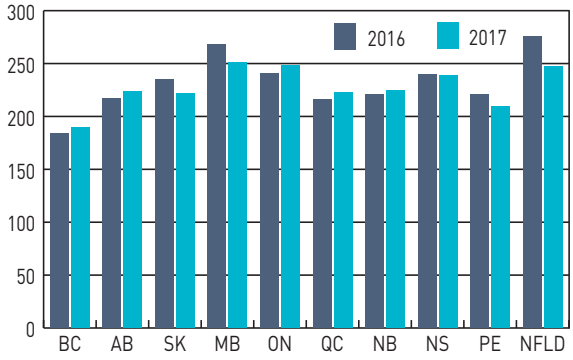
DAIRY HERD STATISTICS BY PROVINCE

Province	Recorded Herds		Recorded Cows		Average Herd Size		% Herds >100 Cows	% Recorded Herds
	2016	2017	2016	2017	2016	2017		
Newfoundland	6	7	928	1,223	154.67	174.7	71.43	25.00
PEI	95	95	8,566	8,656	90.17	91.1	25.26	57.23
Nova Scotia	129	134	12,222	12,736	94.74	95.0	27.61	63.21
New Brunswick	123	122	11,730	12,184	95.37	99.9	33.61	63.21
Quebec	4,224	4,047	274,739	278,218	65.04	68.7	11.74	76.62
Ontario	2,771	2,672	234,643	241,560	84.68	90.4	23.80	75.37
Manitoba	171	165	27,178	30,088	158.94	182.4	50.91	58.80
Saskatchewan	91	89	15,864	15,929	174.33	179.0	74.16	57.50
Alberta	390	376	56,787	59,880	145.61	159.3	71.28	73.13
British Columbia	298	280	49,056	48,516	164.62	173.3	67.14	58.85
CANADA	**8,298**	**7,987**	**691,713**	**708,990**	**83.36**	**88.8**	**22.84**	**73.59**

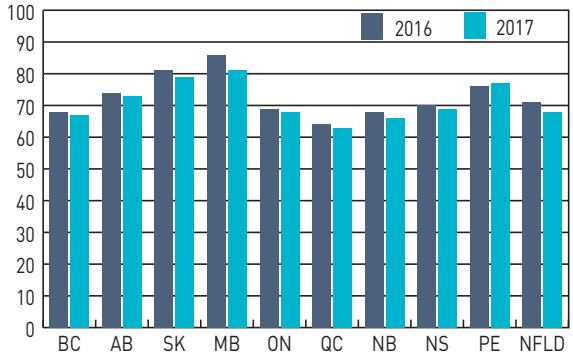
MILK PRODUCTION (KG) PER COW PER PROVINCE



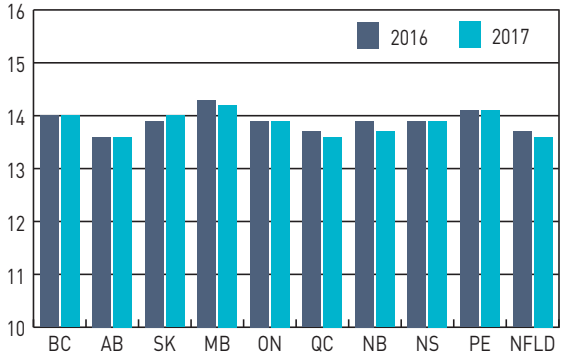
SOMATIC CELL COUNT ('000) AVERAGE BY PROVINCE



DRY PERIOD (DAYS) AVERAGE BY PROVINCE

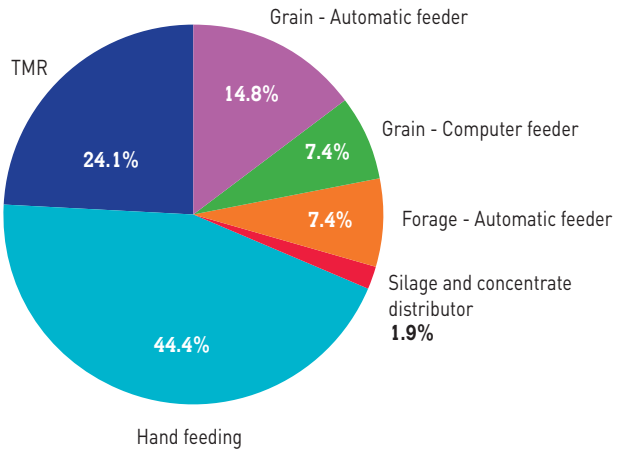


CALVING INTERVAL (MONTHS)

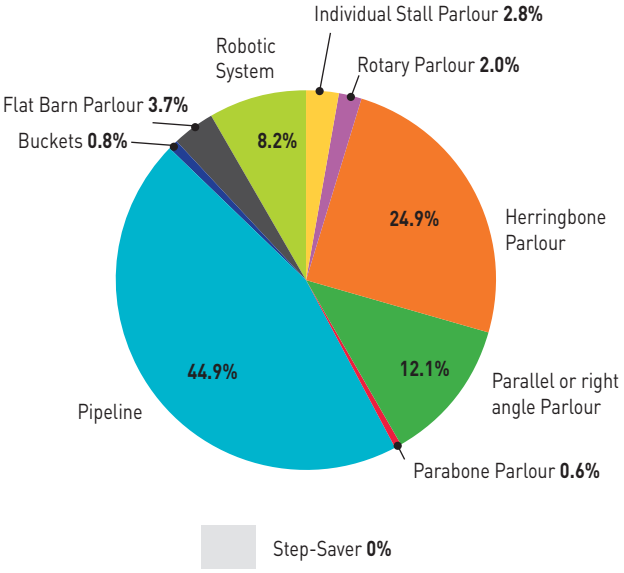


MANAGEMENT SYSTEM TYPE IN THE ATLANTIC PROVINCES

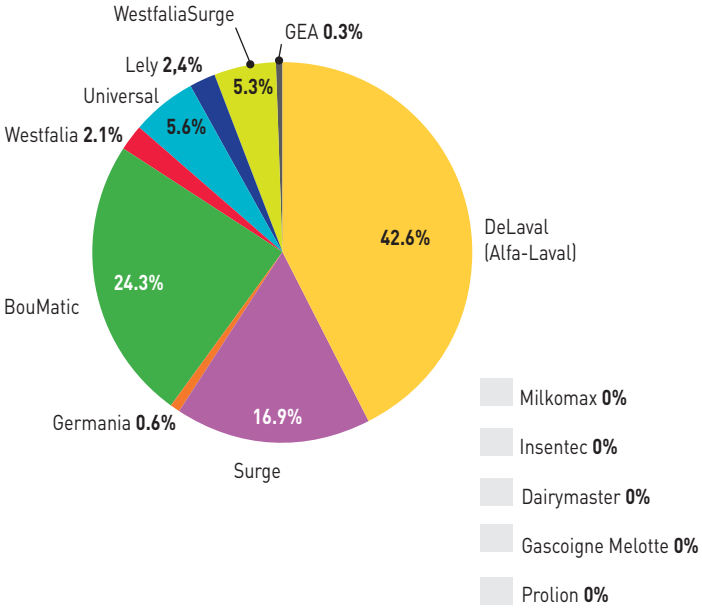
FEEDING SYSTEM



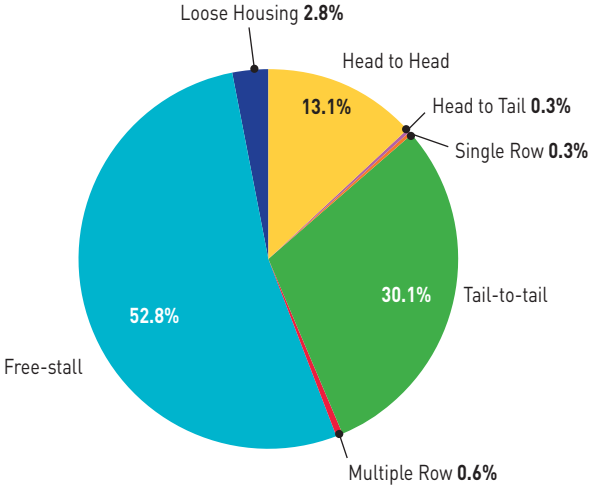
MILKING SYSTEM TYPE



MILKING SYSTEM BRAND



BARN TYPE



VALACTA-ATLANTIC PRODUCTION AND MANAGEMENT AVERAGES - DECEMBER 2017

Breed	Average	Percentile 10	Percentile 90
MILK PRODUCTION (KG)			
Holstein	9,675	7,503	11,645
Ayrshire	7,261	5,969	8,377
Jersey	6,685	5,956	7,583
All Breeds	9,476	7,237	11,615
AGE AT FIRST CALVING (YY-MM)			
Holstein	2-2	2-6	1-11
Ayrshire	2-5	2-7	2-2
Jersey	2-2	2-4	2-0
All Breeds	2-2	2-4	2-0
WEIGHT AT FIRST CALVING (KG)			
Holstein	619	567	666
Ayrshire	N/A**	N/A**	N/A**
Jersey	N/A**	N/A**	N/A**
All Breeds	616	561	666
LONGEVITY (% 3rd LACTATION PLUS)			
Holstein	39.6	29.2	50.7
Ayrshire	50.6	46.1	55.2
Jersey	48.0	37.8	59.3
All Breeds	40.3	29.6	51.6
SCC ('000 S.C./ML)			
Holstein	226	335	130
Ayrshire	192	281	138
Jersey	206	253	137
All Breeds	225	335	128
OTHER PARAMETERS (ALL BREEDS)			
Cows in Milk (%)	86	81	90
Replacement Rate (%)	32.3	19.5	43.8
Dry Period (days)	70	94	52
Calving Interval (days)	420	460	390
Linear Score	2.6	3.0	2.0

	Average	Percentile 10	Percentile 90
FAT, KG (%)			
Holstein	389 (4.01)	299 (3.75)	486 (4.27)
Ayrshire	305 (4.19)	258 (3.87)	348 (4.40)
Jersey	333 (4.98)	294 (4.73)	382 (5.28)
All Breeds	384 (4.06)	293 (3.77)	476 (4.37)
PROTEIN, KG (%)			
Holstein	312 (3.23)	245 (3.11)	245 (3.11)
Ayrshire	243 (3.34)	205 (3.21)	205 (3.21)
Jersey	249 (3.71)	216 (3.59)	216 (3.59)
All Breeds	307 (3.25)	238 (3.12)	238 (3.12)
AVERAGE HERD WEIGHT INCLUDING COW-HEIFERS (KG)			
Holstein	663	601	699
Ayrshire	N/A**	N/A**	N/A**
Jersey	N/A**	N/A**	N/A**
All Breeds	658	597	698
MARGIN OVER FEED COST ($/COW/YEAR) *			
Holstein	4,479	3,287	5,618
Ayrshire	N/A**	N/A**	N/A**
Jersey	N/A**	N/A**	N/A**
All Breeds	4,397	3,235	5,570

* Milk value minus feed cost.
** A minimum of 5 herds is required to calculate an average; this minimum is not met.

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