La Revue Holstein Québec

Managing a large herd

Breeders too must adapt their ways

Herd Profiles

Ferme Champagne et frères and Ferme Berni These large herds are models of the genre



BY
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Large herds

A definite learning curve

growing number of breeders are drawn to the idea of owning a large herd. Some are inspired by the results of studies indicating that the greater efficiency and economies of scale obtained with large herds lead to greater profitability. But operating a herd of some 200 cows is a demanding endeavour that requires specific skills with regard to both herd and business management, particularly that of human resources.

Operating a large dairy herd also means opting for free-stall housing, a transition that is not without its challenges. Fred Martineau didn't experience that transition on the farm of which he is now a shareholder, Ferme Champagne et frères (read the profile), but he remembers how things were on his parents' farm. Likewise, his experience as an advisor, particularly a financial advisor, has given him some insight into the matter.

He stresses that tie-stall and free-stall operations involve two completely different models of herd management. In the interest of efficiency, breeders have to adapt by developing new reflexes. He explains that "it's almost as if they weren't the same cows," because they behave differently in their new environment. Germain Bernier and his son Shany, of Ferme Berni (2001) inc. (read the profile), mention, for example, that cows that have spent their entire lives tied up won't dare back up in a free stall. That means they won't visit the feed bunk or the water bowl. As a result, they produce less milk and are likely to be removed from the herd.

The transition to open housing is so demanding that both Fred Martineau and Germain Bernier agree that in some cases it

would be better to simply sell the herd and buy a new one, one that is already accustomed to free stalls. As Germain Bernier points out, a good cow that is unable to adapt to its new environment will produce far less milk and lose value, constituting a loss for the producer.

On the other hand, it is easy to understand that breeders who have developed good cow families may be disinclined to let them go. A will to understand how animals behave in an open environment and to adapt one's practices can smooth the transition.



Understanding animal behaviour

Dr. Frédéric Tremblay works at Bureau vétérinaire de Sainte-Marie and has spoken often on the subject of animal behaviour. He explains that cows housed in tie-stall facilities don't rely on their natural reflexes. Because they are always tied, they are never in direct contact with other animals and are less able to react to the attitude of the humans around them.

In a free-stall barn, the situation is completely different. In real life, cows are considered prey and so are naturally inclined to flee a stressful situation. Likewise, in the eyes of the cow, and until proven otherwise, humans are predators who arouse suspicion. Of course, there is no shortage of examples of cows that have developed a trusting relationship with humans, but in these cases, the people in question have likely figured out how to behave with their animals.

Dr. Tremblay also mentions a cow's range of vision. With eyes on each side of her head, a cow's field of vision is about 330 degrees. The only spots that are not visible to her are a small area in front of her muzzle and the area behind her. A breeder standing directly behind the cow will not be in the animal's field of vision, so the cow will instinctively turn her head from side to side to see what is going on. With the breeder behind her, the cow may zigzag forward and even change direction entirely to get herself out of a stressful situation. It is thus preferable to move alongside the animal, or move from one side to the other, to encourage the cow to move forward naturally and efficiently.

Similarly, if the breeder wants a cow to react, he or she will have to put some pressure on the animal. Sometimes the handler's position is pressure enough. But, emphasizes Dr. Tremblay, it is also important to back off when the animal reacts appropriately. By moving away, the breeder conveys the message that the cow is behaving well and will be rewarded. The cow then generally continues to move forward naturally. With these practices, a halter becomes almost redundant.

Dairy cows also have excellent hearing, so there is no need to yell to be heard. Moreover, a cow's skin is sensitive enough to feel a fly land, so there is absolutely no call to hit a cow to make her obey. Placing a hand lightly on the animal is more than enough.



Fred Martineau and New Armagh Razor 6121 are indisputable proof that animals and humans can develop a trusting relationship. But Fred acknowledges he wouldn't be able to take a selfie with all his cows.

Fred Martineau also points out that cows naturally all behave the same way, so if one of them is frightened, all her companions will be as well. Cows also have a herd mentality and tend to follow the dominant animals. Breeders also need to keep in mind however that cows move more slowly than humans.

In light of all these factors, says Dr. Tremblay, before planning a move to open housing or the purchase of a milking robot, breeders need to develop different reflexes that take into account a cow's natural behaviour. With a robot, he explains, the adjustment period is already demanding enough without making it

worse with an attitude that counters a dairy cow's natural behaviour.

Understanding cattle behaviour also brings economic benefits. Animals that experience less stress produce more milk, are in better health and reproduce more easily. Moreover, when things are going well, breeders suffer less frustration and the work environment is safer, not only for the breeders but for the animals as well.

These are only a few examples of the natural behaviour of cows. A number of videos on the subject are available at www.youtube.com: type "dairy stockmanship" in the search box.

Adapting management to increase production

Bearing all this in mind, it is easy to understand that the high-production cows in tie-stalls will not be the ones that perform best in a free-stall environment, says Fred Martineau. A timid animal that is reluctant to head for the feed bunk will produce less milk, even if she has the genetic potential for high production.

Jacques Bernier, one of the owners of Ferme Berni, recalls the adjustments that had to be made when he and his brother Germain decided to switch to a free-stall barn, in 1998, to increase the size of their 80-head herd that was housed in a conventional barn. The idea of expanding the existing building was on the table, but the breeders thought that open housing was the best option for the future, despite the fact that the cost, about \$450 000, was three times that of expanding the old







barn. They also decided to install a milking carousel, one of the first in Quebec. At that time, recalls Jacques Bernier, breeders in Quebec had little experience with this type of equipment and knowledge sharing was limited as well. Hence the breeders proceeded by trial and error to make their project work.

The first year was difficult, he recalls, particularly due to lameness, a problem that went virtually unnoticed in the old barn. But both the breeders and the cows adapted, and the experience proved positive. In 2014, the breeders opted for milking robots, a transition that involved a few challenges, but the



Cow comfort should be an important consideration when planning new facilities.

adjustment period lasted only a month. Jacques Bernier admits that the biggest mistake that he and his brother made in 1998 was to close their eves to any possible negative aspects of the change. "We could only see the good side, but the problems arose as we went along." Today, when breeders talk to him about their plans, Jacques Bernier is encouraging, but he warns them about believing anything that sounds too good to be true. "It's best to be wary of perfection," he says, underlining that a visit with a breeder who is willing to discuss the obstacles he or she had to overcome will be a much more valuable encounter.

Jacques Bernier also stresses that herd management is entirely different in a freestall barn. Although it is easier to see which cows are in heat, he says, insemination is a bit more complicated. The breeders thus had to adapt their practices. Moreover, early installations were not as functional as those available today, so they had to make some improvements themselves. Nowadays, automatic, removable gates make it much easier to immobilize an animal. That's an advantage, affirms Fred Martineau, because in large dairy operations, providing individual animal care cannot be complicated or timeconsuming, otherwise producers won't bother.

Managing human resources

Operating a large herd necessarily requires the collaboration of many people. If the farm is a family business and all the shareholders are involved in the work, they will all be engaged around the goals they have set for themselves, with a collective management structure. The farm will have few employees, and those they have will often be family members. The only danger is that the owners may have trouble putting themselves in the shoes of their employees, which can have an adverse effect on relations.

On the other hand, if the farm has a sole owner, he or she may be devoting a great deal of time to management, particularly employee management. In this case, the owner is often removed from the regular farm work and animal care. For those who have chosen a career in agriculture and breeding because of their passion for cattle and time spent in the fields, the situation can be a source of frustration. If this is the case, the idea of expanding the herd may need to be reconsidered.



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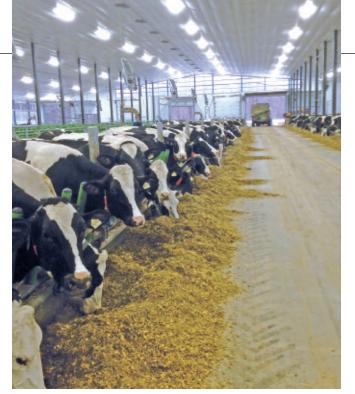
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Good facilities must be designed not only for the animals, but also for the farm's staff, who will appreciate good working conditions.

The Regroupement des grandes fermes laitières du Québec (RGFL large herd association — see box) has organized conferences on farm labour, whether the employees are Quebec residents, workers from elsewhere who have a temporary work permit, or immigrants who intend to stay here. To keep good employees, explains Célia Neault, secretary-treasurer for RGFL and a shareholder of Ferme Drapeau et Bélanger inc., you need functional facilities, well-adapted work methods that make the job pleasant, and good working conditions, which refer not only to wages, but also to respecting employees' individual needs. She also underlines that owners who hire a large number of employees need to be able to rely on the complicity of key staff members, who can take charge of one section of the operation, such as the nursery, the cow barn, the machinery, etc.



Winners of Canada's Outstanding Young Farmers Program, in 2016, Célia Neault and her partner, Dominic Drapeau, employ about 20 people, 2 of whom are from Nepal. Célia says she is very happy with the quality of the work done by these immigrants and hopes they will stay for a long time. She adds that they and their families contribute vitality to the community, an important element in many of Quebec's rural areas.

Organizations for large herd owners

Eight years ago, Dominic Drapeau, of Ferme Drapeau et Bélanger inc., proposed the idea of bringing large dairy herd owners together. In March 2009, the *Regroupement des grandes fermes laitières du Québec* was thus created. As highlighted on its Web site (www.rgflq.com), the organization "aims to bring together Quebec's large dairy producers to provide information that addresses their unique needs." The organization currently has a membership of 80, and although it considers large herds to be those producing 150 kg BF/day, their doors are open to all innovative and forward-thinking producers, regardless of their production level.

The RGFL organizes conferences and farm visits to address issues that are specific to large operations, such as infrastructure, work methods, precision farming, time management or personnel management. Célia

Neault, secretary-treasurer of the organization, mentions that industry stakeholders are often invited to speak at these conferences. She explains that the network the organization has built up over time, promoting contact between producers and stakeholders, is greatly appreciated by its members.

Farmers' advisory groups in Quebec (GCAQ: Groupes conseils agricoles du Québec) are also interested in the province's large dairy farms. The organization holds a yearly seminar on herds of 100 head or more, presenting the technoeconomic results of large farms that are members of a farmers' advisory group. Conferences and farm visits are also on the program.

By MICHEL DOSTIE Editor

Translation by Nicole De Rouin



Ferme Champagne et frères

High production with a uniform herd

ith a large herd, we're looking for cows that resemble one another and are easy to manage, explains Fred Martineau, in charge of health and reproduction, in addition to the budget and finances, at Ferme Champagne et frères inc., in Sainte-Agathe-de-Lotbinière. So indexes (LPI, TPI, NetMerit, etc.) are not among their selection criteria.

Instead, the breeders focus on a few key traits that are in keeping with their goals, while working to lessen any weaknesses in the herd. Since the animals are housed in free stalls, good feet and legs are essential, particularly the angle of the feet and the rear view of the rear legs. As for production criteria, they focus mainly on components. Since 2002, when the younger generation became involved (see box: A family affair), selection based on these criteria has been rigorously applied.

Stature has always been an integral part of their breeding strategy as well. The breeders' goal is to have a uniform herd, with cows that are neither too big nor too small. To that end, they choose sires with an index slightly below the breed average, which, in American numbers, means below 0.75. They prefer to base their choice on indexes published to the



The shareholders and permanent and part-time employees of Ferme Champagne et frères. From left to right, front row: Vincent Champagne, Jean-Pierre Martineau and Tomy Martineau; standing: Kathy Moores, Éric Champagne, Mathieu Champagne, Steve Champagne, Alexis Champagne, Jérémy Martineau, David Martineau, Fred Martineau and Jordan Laflamme.

south of the border, especially those recorded solely in open housing, which are more consistent with their reality. As Fred Martineau explains, the smaller cows generally have more consistent feed consumption and a better feed conversion ratio. Moreover, they have an easier life, he says, as their legs are supporting less weight.

0 to 11 000 kg/cow/year. A carefully selected group of bulls

To develop the herd they wanted, the breeders first identified 10 to 12 bulls that met their breeding criteria and stored the semen on the farm, as the inseminations are done there. For every mating, they then selected a bull from this group that would compensate for the weaknesses of each of the cows.

Now that they have a herd that meets their core objectives, their selection process has become more exacting. Accordingly, their sire selection is now based 50 to 60 per cent on production criteria, mainly components, 30 to 40 per cent on health criteria, particularly longevity, daughter fertility and somatic cell count (SCC), and 0 to 10 per cent on conformation. With these requirements, and because they now use only genomic young bulls for breeding, their sire pool is limited to six or seven bulls. When making their final decision for each cow, the breeders consider on-line recommendations as well, which, among other advantages, enable them to avoid inbreeding.

Likewise, now that genomics are in use, the small number of bulls in reserve means the turnover rate is much higher, and the herd comprises only a few daughters by each sire. "All that without changing our selection criteria," says Fred Martineau.

Prompted by their cousins, Robert and Julien Chabot, as well as representatives from the artificial insemination centres, these young breeders began registering the entire herd in 2003. In 2005, they also began classifying heifers at their first calving to take advantage of the economic benefits of using of young sires. At the time, however, sire selection was based on conformation. Fred Martineau recalls that with the help of Donald Dubois, then an advisor for Alta, as well as judge emeritus, they were able to evaluate all of their cows to simplify sire selection. Fred adds that "Donald was an exceptional individual who helped us a great deal." The

Figures for Ferme Champagne et frères

Number of cows:

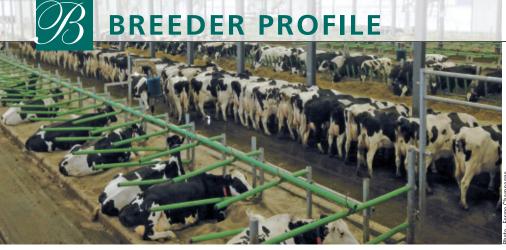
280, including 250 in lactation **Number of heifers and yearling heifers:** 290

Current production:

35 to 36 kg/cow/day, for an average of 10 500 to 11 000 kg/cow/year.

Expected production in the new barn: 37 to 38 kg/cow/day

Calving interval: 275 to 280 days (1.7 to 1.8 inseminations per pregnancy)
Crops: 486 ha (81 of which are rented) devoted to grain corn, soybeans, corn silage, alfalfa silage and grass hay.



One section of the new free-stall barn at Ferme Champagne et frères.

results are evident, as the proportion of animals classified GP and better has risen from 48 to 70.6 per cent over the past six years. In April 2016, the New Armagh herd included 2 EX, 29 VG, 179 GP and 84 G.

A new barn

Until last December, the herd was housed in the barn built by the three Champagne brothers when they started the operation. The building provided open housing and was equipped with a milking parlour. After 2002, the new generation on the farm made all the modifications they could to improve cow comfort. But, in 2003, when they acquired an entire herd accustomed to free stalls, they decided to abandon steer finishing and moved their yearling heifers into the building that was previously used for steer. A nursery was also fitted out in 2005. Since then, production has increased steadily from 26 to 35 kg/cow/day, and the involuntary cull rate has dropped. Fred Martineau attributes this success not only to changes in herd management and improved animal comfort, but also to the genetic selection process they

Topo: Ferme Channagene

The new barn at Ferme Champagne is equipped with a 30-cow carousel and the cows are milked two or three times a day, depending on their stage of lactation.

implemented in 2003. Today, the herd fills a quota of 355 kg BF/day, a marked increase from the 117 kg it was when the five current owners purchased the farm.

The breeders had made all the improvements they could for the milking cows but knew that the yearling heifers deserved better. They

A family affair

In 1968, Viateur Champagne invited his brothers, Michel and Boniface, to combine their respective herds, build a new barn outfitted with 80 free stalls, and begin working together. The response was positive and Ferme Champagne et frères inc. was thus born. As of 2002, five of the family's descendants are shareholders in the operation, namely Steve, Éric and Vincent Champagne, Michel's sons, and brothers Fred and Jean-Pierre Martineau, nephews of the farm's founders. Three full-time employees, two of whom are family members, are aided by some of the shareholders' children and a neighbour on a part-time basis. During the summer months, a student in training also joins the team.

The farm's 280-head herd includes 250 cows in lactation and 290 replacement animals under 2 years of age. The high number of heifers and yearling heifers is needed for the planned increase in production. The same rational applies to the new barn. The breeders are thinking ahead and want to ensure that the right conditions are in place when it comes time for the next generation to take over.

thus decided to build a new barn, and house the replacement animals in the old cow barn. That project, which they executed themselves, took over two years to complete. The result is a free-stall building, with sand bedding and a milking carousel.

The herd moved into the new barn last December. According to Fred Martineau, the cows adapted relatively quickly to their new environment. Milk production decreased initially, for the first three days, but has returned to normal for the majority of the animals. One improvement however: the cows that have calved since the move have had higher yields, leading the breeders to believe that all the cows will become more productive over time. Accordingly, the quota that was 355 kg in the old barn is now at 384 kg.

In addition to enhancing cow comfort, the new barn has also improved working conditions for the team, and made it easier to manage the herd. For example, the milking cows are now divided into groups, with first-calf heifers separated from the larger cows to avoid competition. There is also a separate pen for fresh cows, which is equipped with headlocks so the animals can be immobilized without risk or effort. The headlocks are a useful tool, because the breeders take each cow's temperature daily for the first 20 days of lactation, in addition to blood samples on the 5th, 10th and 15th day to detect ketosis (Type 1 or 2).



At Ferme Champagnes et frères, sand bedding is used to ensure cow comfort.

BY
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Translation by





Ferme Berni

A focus on embryos

or Shany Bernier, of Sainte-Élisabeth-de-Warwick, operating a large herd and taking an interest in high-calibre genetics are not incompatible pursuits. The 185 cows housed in free stalls on Ferme Berni (2001) inc., which is equipped with an automatic milking system, don't stop him from keeping up with developments in genetics and playing an active role in the marketplace. Rather than setting his sights on a larger herd, however, he aims to increase his operation's revenue through the sale of animals with high genetic value.

In that context, Shany devotes much of his time to embryo production and has acquired some animals well-suited to the task. Embryo transfers are done every two weeks, and most of the embryos are transferred to cows on the farm. Given the size of the herd, there is no lack of embryo recipients, and, in fact, half of the cows and all of the heifers are used for that purpose.

The donor cows acquired over the past few years all come from families that have remarkable production records, excellent conformation and good longevity. Among them is *RMW Facebook Ashley*, VG-87, a cow that has already calved twice and earned a Superior Lactation certificate. To Shany's satisfaction, *Ashley* has proven to be a prolific embryo donor, providing 20 to 25 embryos per flush. She is already dam to many heifers, the eldest of which calved last

La Ferme Berni (2001) inc.

Number of cows:

210, 185 of which are in lactation

Number of replacement animals: 175

Average production per cow:
12 346 kg of milk, with 3.92% fat and

3.32% protein. **BCAs:** 275-265-275

Quota: 270 kg BF/day Classification:

7 EX, 71 VG, 82 GP and 22 G

Crops: 752.7 ha, with 267 ha devoted to grain corn and silage, 214.5 ha to soybeans, 129.5 ha to wheat, and 97.2 ha to alfalfa and timothy for silage, in addition to 445 ha of woodland. The corn silage is stored in vertical silos while the haylage is stored under a roof in horizontal silos. Hay is purchased off-

April. *Ashley* is currently under contract to Semex.

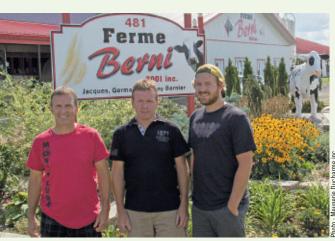
Blondin Garrett Bahamas, EX-91, a descendant of the Barbie family, is also among the animals the farm has purchased for embryo production. Bahamas has a Superior Lactation as well, and her eldest daughters have calved recently. As for red and white Holsteins, the farm now owns Morsan S Debonair Emma Red, VG-87-3yr, already dam to 7 daughters, classified 2 EX, 2 VG and 3 GP.

Shany Bernier also counts on *Eastside Lewisdale Miss Style*, VG-87-2yr, first Senior Two-Year-Old in Victoriaville, in 2016. Ferme Berni has co-owned *Miss Style* with Ferme Kamlake since August 2016. A very recent addition to the Berni herd is *Olistein SRC Seaver Berthe*, born in March 2015. The heifer

The next generation is well prepared

For the moment, Shany Bernier, recently a new father, works as an employee on the farm owned by his father, Germain, and his uncle, Jacques. But, on July 31 of this year, he will acquire a 50-per-cent interest in the farm, a transition the owners have been planning for a long time. With their approval, Shany has been actively involved in the decision making for some time now. After completing a DVS in dairy production, he took up his place on the farm, devoting much of his attention to his passion for genetics. Herd management is also his responsibility, and it was at his urging that the carousel was replaced by four milking robots in 2014.

Shany's sister Meggie, currently studying animal production at the ITA in Saint-Hyacinthe, plans to join her brother on the farm when she has finished her diploma, and may eventually become a shareholder in the operation. The Berni farm also counts on the support of three permanent employees.



Shany Bernier, right, with, on his left, his father, Germain, and his uncle, Jacques.

BREEDER PROFILE

is a daughter of *Jacobs Sid Brita*, VG-88-3yr, a descendant of *Britany*, EX-96 2E 6*, voted My Favourite Cow 2016.

An emphasis on embryo production also requires worthy sires. Proven bulls are used for 50 per cent of the breeding while genomic young bulls are used for the rest. The latter must be descendants of reputable families and have well-balanced proofs. As is the case for proven sires, the young bulls must have proofs of +1000 for milk, +15 for conformation and excellent results for health. With regard to conformation, Shany focuses in particular on the scores for feet and legs and udder quality, criteria that are well justified in a context of open housing and robotic milking.

Goal: increase milk production

The heifers born of these matings, generally weighing about 700 kg when they calve at the age of 21 to 22 months, must produce a first-lactation yield of 10 500 kg of milk to meet Shany's expectations. Accordingly, heifer-rearing methods are especially important to this breeder. From birth to 2 months, the heifers are housed together around an automatic milk feeder. For the following 2 months, they receive a complete ration and, from 4 months to calving, are fed silage, hay and a supplement. The animals are housed in small groups in large pens, an easy way to ensure good management, explains Shany.

Feeding is also of prime importance as, according to Shany, it is the most critical



On the Berni farm, early-lactation cows are treated as a separate group and are housed on straw bedding.



RMW Facebook Ashley, VG-87, is a prolific embryo donor, providing 20 to 25 embryos per flush. She is currently under contract to Semex.

determinant for milk yield. Hence there are three cuts a year for silage. The first cut is for the yearling heifers and dry cows, while the second and third are fed to the milking cows. This haylage is mixed with corn silage in a fully automated TMR system.

A love for beautiful cows

Shany Bernier says he gets more enjoyment out of working with good-looking cows. He also enjoys attending shows and likes to take part when he thinks he has a potential winner. After he began classifying in 2008, *Berni Windbrook Fadie* was the first cow bearing his prefix to classify EX. At 2 years and 2 months, *Fadie* was awarded a Superior Lactation for a 305-day yield of 13 113 kg of milk (3.6% fat and 3.1% protein), for BCAs of 320-309-312.

Classification allows Shany to see how his breeding decisions influence the herd. The results are positive, he says, because the proportion of animals classifying GP or better in the herd has risen from 61 in 2008 to 82 per cent today. As for VGs, that proportion has increased from 8 to 36 per cent.

Option: robotic milking system

Brothers Jacques and Germain Bernier took over ownership of the family farm in 1986. Twelve years later, they made the switch to free-stall housing and a milking carousel, with a quota of 120 kg BF/day. Although Shany didn't experience the transition from a traditional barn to free-stall housing, he is very happy to be able to operate the herd in

that building today. A few improvements have been made since to enhance cow comfort, but the biggest change was in 2014, when, at Shany's instigation, the owners replaced the carousel with four milking robots. The stalls were also modified then to accommodate sand bedding.

Shany remembers that for the first month after the robots were installed, "we wanted to get rid of it all." But he says they learned to be patient, and things sorted themselves out, of course. The cows visit the robots for an average of 3.2 milkings per day, but early-lactation cows are the most frequent visitors, with 4 to 5 milkings per day. Today the breeders are very pleased with their decision, particularly since average production per

cow has increased from 10 000 kg to nearly 12 500 kg, and the somatic cell count (SCC) has dropped. Shany attributes these improvements in part to the robots, but also to enhanced cow comfort and genetics. Likewise, he appreciates all the information he has at his disposal from the computer linked to the robots. Shany shares the opinion that many breeders have of robotic milking: the technology is an amplifier. Hence, if yields are high before the switch to robots, they'll improve with the change. If production is poor, however, the situation will only get worse.



The Berni farm has four milking robots and the cows are milked an average of 3.2 times a day.