



milking parlours

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International
**Dairy
Topics**

Making the right decision to secure future investment

Dairymaster, Ireland

Does parlour type make a difference to business performance? A DairyCo report published has revealed that choosing a rotary parlour as opposed to automatic milking systems (AMS) can have as much as 5.7 pence per litre difference. Take a farm with a herd of 200 cows with an average yield of 9,000 litres – this can make a difference of £102,600 in margin alone.

Somewhere in the UK right now there is a farmer with a very important decision to make, which milking parlour do I invest in for the next 20 plus years? Which parlour will make the most financial sense by reducing labour, increasing efficiency through automation and provide the necessary backup and support needed? We believe the super-efficient Dairymaster Swiftflo Revolver Rotary milking parlour is the answer! Three years ago David Burroughs, a farmer from Suffolk in the UK, had to ask himself these questions, here's what he had to say:

"We fell in love with rotary parlours and after looking at every rotary parlour out there, Dairymaster was the parlour we chose, we loved the stainless steel side of it, you can keep it clean, lovely pulsation on it. The other big thing is the backup, because we are as East as we can possibly be in the British Isles we needed a backup, it was a big decision on why we picked Dairymaster and they certainly have delivered."

There are numerous benefits to milking in a Dairymaster parlour, better udder health, maximise milk yield by typically 5% more, typically milk each cow one minute faster, overall you are increasing output while reducing labour which, in the long run, makes farming a lot more profitable.

Mark Chetwynd is a Welsh dairy farmer who also had a tough decision to make this year, he had a different make 60-point rotary parlour, it was

inefficient and costing him money so he began to explore solutions. Would it be possible to upgrade to a Dairymaster Swiftflo Rotary Parlour and more importantly, if he did would he really experience that Dairymaster difference? Here's what Mark had to say:

"The biggest change and difference I have seen in my cows is the fact that the cows seem a lot more relaxed. We must have had probably 10 or a dozen cows out of 650 who would kick and we had to use a kick bar occasionally on them, since we have been in a Dairymaster we have not used one. The let-down is a lot quicker, it is quite clear to see. My yield has gone up, it is unbelievable because we haven't changed any ration, the rations have stayed the same. I would also say we are milking 30 minutes per shift quicker now to what we were. It is a joy to milk in the parlour."

Dairymaster's milking equipment has been designed to have the lowest levels of liner slip, excellent milk out and lower shear forces on teats which is much better for udder health. Research has shown Dairymaster to have the most stable milking vacuum, while applying a very low vacuum in the rest phase. This results in better teat ends by milking the way nature intended!

As herds are increasing in size the need for advanced automation and efficiency in milking has never been more important. The Dairymaster Swiftflo Revolver Rotary Parlour milks more cows, in less time, with less labour. Dairymaster's intelligent automation increases efficiency by controlling all functions from milking to feeding to drafting and even seamlessly integrates with their health and fertility monitoring system – MooMonitor+. Dairymaster are also world renowned for their incredibly fast installation. Dairy farmer, Seimon Thomas discusses the amazing five-day installation of his stainless steel state-of-the-art 70 point Dairymaster Swiftflo Rotary Parlour:

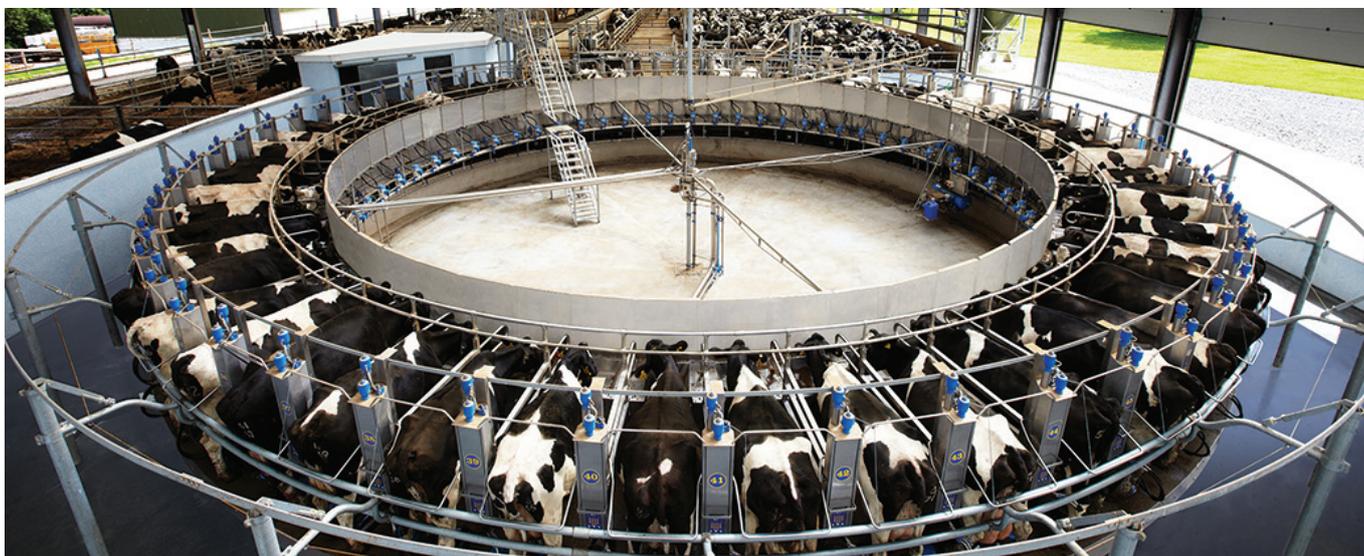
"Having stainless steel means that it will last forever. That's why we went for Dairymaster as well, the amount of stainless steel in the build. Other competitors would take two or three months to install the parlour, which would mean that I would have to be there more time. With Dairymaster being here for only one week it was ideal for us really. They soon got into things and by the end of the week we had all the rotary installed."

Dairymaster ensure the best build quality by building all their parlours in-house and building them for heavy-duty use. All parts are manufactured in the same location for optimum integration.

"We had a 24-unit double up parlour before. When we had 100 cows it was fine but now we've grown up to 650 cows. We went to the Dairymaster factory in Ireland where they make over 90% of the products themselves. In the end we took the decision to go for a 70 point Dairymaster. We saw that Dairymaster offered a very superior package with everything involved."

With the overwhelming benefits of a Dairymaster rotary parlour it is easy to see why it is such an attractive way of milking for not only this generation but also the next generation of young farmers, securing your future investment to producing milk efficiently. ■

dairymaster.com



Investing for the future with more data collection and less labour

DeLaval, Sweden

Johannes Aalberts is a dairy farmer who believes investing for the future with less manual work and more data collection is the way forward. The farm currently has 950 cows, but the family's goal is to increase the herd size to 1,400. The farm also has 20 employees. In other words, there is a lot to keep track of. When all cows are being milked on the rotary the farm management system DeLaval DelPro records all events and life becomes a little easier. The high producing herd has an average yield of close to 11,000kg ECM and a SCC below 150,000; this requires accuracy in data collection and consistent milking routines.

Rotary systems are the most efficient milking system on the market but to utilise them in the most efficient way depends on how the system components are put together. When planning was made for the new milk centre, the focus was on less time on non-value adding work and more time spent on tasks that bring value to the farm. As more cows are being milked by fewer operators, more and exact data is required to keep the quality and production on top.

Therefore, Johannes and his family made an investment in the future where they decided to go for a DeLaval milking system. A system where they can do more with less by gaining higher capacity to harvest more milk with higher quality. They can take decisions with better accuracy and reduce the use of scarce resources. This is possible with the milking system setup they decided to go for the parallel rotary PR3100HD, TSR (teat spray robot), DelPro herd manager and sorting gates.

Performance was one key criteria and therefore the PR3100HD was chosen based on visits to other farms with PR3100HD rotaries up and running nearby. Findings that Johannes made during these farm visits included the unique design, like an angled bail, the 1.5 wide cow entrance ensured high throughput and that the capacity of the platform was also kept on a high level.

One demand for the milking operation was that the milking process should be driven with only two persons in one milking session: one doing the cow-traffic, the other person prepping and attaching the clusters.



A proper stimulation of the cows is done by activating the milk-flow-driven stimulation DuoVac/DuoPuls.

One more of the findings, when looking to the future, was the TSR with its accurate spraying reduces teat dip consumption and keeps it on a steady level. It also reduced the amount of manual work for the milking session so work can be spent on more value adding tasks. More focus can be spent on consistent milking routines in the entrance area as the robot takes care of the spraying at the end of the milking session. Due to the fact that the teat disinfection is not linked to the milking-procedure the TSR is guaranteeing that no disinfection liquid will contaminate the bulk milk.

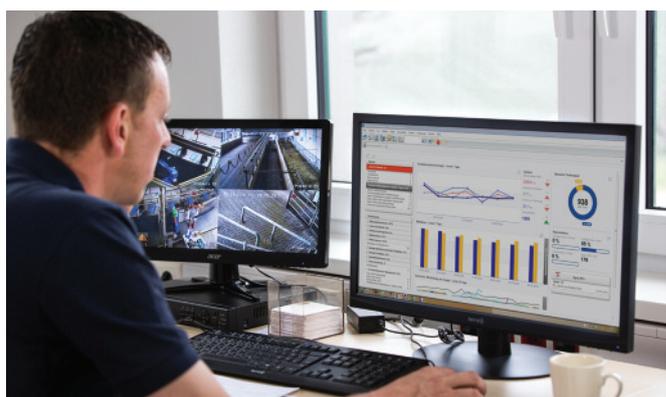
To be successful in herd management tasks a superior ID is required, as this is one of the essential puzzle pieces in the rotary milking system. It is possible due to the high ID rate for identification and milk recording etc to get the right information about the right cow. This is the foundation to take the right decision and take action to manage the herd.

"DelPro shows me immediately when a cow needs special attention," says Johannes. "The system quickly shows me the first signs of illness, so that I can sort the cow for treatment. The system works perfectly and discovers all sorts of irregularities, much earlier and much more reliably than a human being."

DeLaval DelPro is connected to multiple sort gates that can separate the cows into different groups after milking. Cows that need special attention after the milking session can be separated from the other cows so treatment work can start immediately, saving a lot of time not collecting cows in different groups.

"Another major advantage of DelPro is that the system keeps track of when a cow is in heat. This means that the cow is selected at exactly the right time for insemination," says Johannes. When DelPro and the herd management part of the system were combined with all other system components like the 50 bail rotary, DuoVac, AirWash and TSR, two people were able to milk more than 200 cows per hour in one shift. With this high efficient milking system the milking routine was performed in a good way. This is reflected in the high production of 11,000kg ECM and the excellent cow health on the farm with less than 150,000 SCC." ■

delaval.com



Canadian farm achieves automation efficiency like no other

GEA, Germany

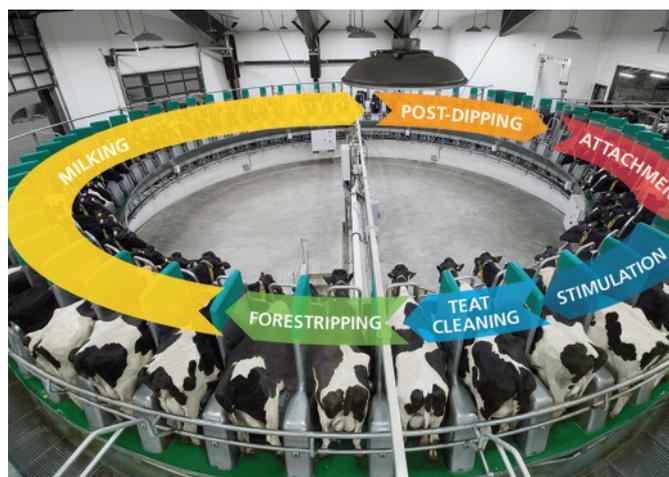
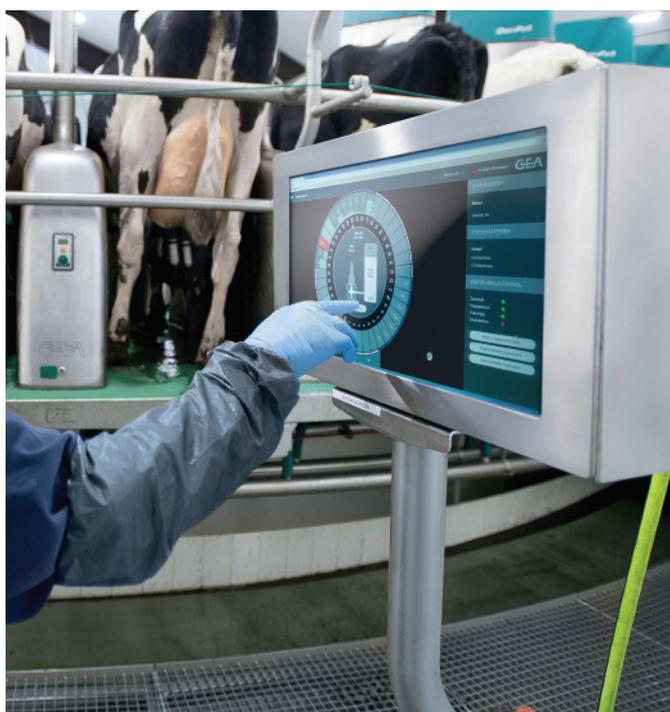
Gracemar Farms knows an opportunity when they see one. In fact, the Tenbrinke family jumped at an opportunity to install GEA's DairyProQ, the first fully automated external rotary parlour in North America. Taking advantage of this new technology paid off big with efficiency, production and milk quality.

The Tenbrinke's journey started with a desire to become more efficient. The farm was running at maximum capacity milking 750 cows in a conventional parlour in Chilliwack, British Columbia, Canada, and an additional 150 cows at a second location in Armstrong, British Columbia.

"We were limited with our traditional parlour because of how much time it took to milk. We were averaging just 150 cows per hour with each milking taking 5-6 hours," says John Kampman, who owns Gracemar Farms with his brothers-in-law, Richard and Michael Tenbrinke, and father-in-law, Wally Tenbrinke. When approached about the new milking system in early 2015, the family was immediately excited about the opportunity.

"We always said if we were to invest in a new milking system it would have

DairyProQ's monitoring technology provides one-touch access to cow and robot performance data.



From stimulation to post-dipping, each milking step is completed in one attachment without any human intervention.

to be a rotary since our management style revolves around milking three times a day," says Kampman. After touring installations in Germany, Kampman knew DairyProQ would be a great fit. "We were impressed right away with the speed of milking, attachment speed and consistency of milking."

Plans were drawn, and their DairyProQ robotic rotary was up and running in March of 2016. At 60 stalls, Gracemar is currently the largest DairyProQ installation in the world. Since installation, Gracemar has cut their milking time in half, milking 300 cows per hour, while increasing their herd size to 1,050 cows with only one operator in the parlour. "By improving our milking speed, we have been able to increase efficiency and cow throughput," says Kampman. "We have also been able to reduce labour costs by bringing the milking cows from our second farm to the main herd."

DairyProQ's all-in-one milking process helped increase milking speed at Gracemar. Every milking step is performed inside the teat cup – without any human intervention – for a fully automated milking process. Stimulation, cleaning, fore-stripping, milking and post-dipping is all done in one attachment. A time-of-flight camera ensures accurate attachment in a matter of seconds.

The milking process is also more consistent. Automation removes the potential for human error and ensures each cow is milked the same way every time. Additionally, every stall has a robotic module, which means that other stalls can continue milking, even if one stall is down.

For Gracemar, consistency has translated to improved milk quality. "We have seen fewer instances of mastitis and a lower somatic cell count. The sensing technology monitors milk conductivity, colour, temperature and volume in each quarter meaning we are putting better milk in the tank," says Kampman.

Monitoring technology also extends to parlour performance, giving the farm access to data on milking length, robot efficiency and more. Gracemar also implemented CowScout activity monitoring neck bands to get additional insights into breeding and herd health data.

"The data that DairyProQ provides has helped us improve our cow management. We can detect and solve issues quicker," says Kampman. "By automating the milking process, we have more time for things like dry cow and heifer management, hoof trimming and parlour maintenance – things that were difficult to complete before because so much time was spent physically milking cows."

Ultimately, GEA's DairyProQ has offered Gracemar Farms the opportunity for better management, improved efficiency and increased production and milk quality.

"We have been very impressed with the results since we've been milking with the DairyProQ. The efficiency of milking is even better than we expected and has allowed us to continue to grow and remain profitable," says Kampman. ■

gea.com

External rotary system provides an extra helping hand

BouMatic, USA

The Dykemans are no ordinary farm family. In addition to milking a herd over 1200 cows, they are a BouMatic dealership servicing other farm families.

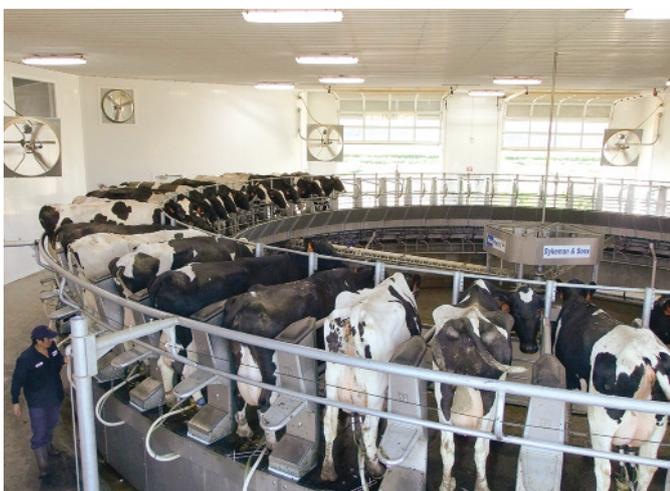
When Mort and Gloria Dykeman started milking in 1969, their herd of 100 cows milked in a Double-8 herringbone parlour. Ten years later the farm became a partnership with the addition of Ray and Roy Dykeman and became Dykemans & Sons Inc. The growth in their dairy led them to a needed upgrade and in 1992 they installed BouMatic's Perfection 3000 Milk Meters and ID and expanded to a Double 12 in the late 1990s. Their milking herd grew from 300 to 600 and more free stall barns were added.

In 2006, the Dykemans decided to rent an additional farm located in Worcester, New York. They were then able to milk another 400 cows and further grow their herd. Ray and Brenda's son, Kyle, graduated from Cornell University at that time and came back to farm with the family. They became a partner in a 500-cow herd with 17 other members called Envision Dairy LLC in 2008.

By 2011, the third free stall was built and the herd had grown to 900 cows, maximising their milking facility at the home farm. This is also when they became a BouMatic dealership.

Feeling a lack from dealerships around them for their own dairy's needs, they felt they had a lot of knowledge to offer to the area. The Dykemans also have a love and respect for BouMatic milking equipment that made the choice an excellent fit. They are currently servicing over 12 dairy farms with one service technician.

In 2016, Dykemans completed their latest expansion with the building of a 60-stall Xcalibur 360EX external rotary. And recently, the SR-1 BouMatic Spray Robot was put into action keeping them on the cutting-edge of BouMatic innovation.



External rotary

Designed for continuous, around-the-clock milking, the BouMatic Xcalibur 360EX is rugged and precision engineered to deliver unrivalled throughput and maximum efficiency for a dairy operation.

Reducing the risk of downtime and finding ways to help an operator save costs with energy efficiency are all factors of the design. Super strong radial arms link the platform to the centre. The platform rotates on a massive circular double I-beam rail system with nylon rollers for the ultimate in smooth operation that is safe and easy on cows. The extremely durable nylon rollers require no lubrication and reduces maintenance costs. The rotary electric drive system saves operating costs with an energy efficient design.

The system also provides comfort to both the cow and operator. The sloped concrete platform deck enhances cleaning and promotes sure footing for the cows and a quiet environment for milking. Low profile cabinets eliminate an intimidating maze of pipes and a well-designed entrance and exit add to the cow's comfort.

Each stall has an integrated system console to house automation components and pulsators and provides easy access to CIP jetter cups. Automation is within easy reach of the operators to prevent fatigue. Fold-down jetter doors are positioned for easy access and quick set-up.

Smooth operation, clean, contemporary lines and easy cow loading and unloading are hallmarks of BouMatic's rotary milking system. Through increased cow comfort, operator efficiencies, improved equipment performance, and long lasting construction, the Xcalibur 360EX provides dairy operators with the ability to harvest the highest quality milk gently, quickly and completely.

SR-1 Spray Robot

The purpose of the SR-1 is to care for and prevent infection of the cow's udder meticulously immediately after milking. The spray robot integrates into the rotary milking system, but functions entirely independently. Because of this it can be applied to every type of external rotary milker.

By applying high pressure to the spraying agent a very fine mist is created. The unique spraying mechanism reduces consumption of the spraying agent compared with conventional sprays.

BouMatic is now focusing on the further development of accessories and components for the spray robot as well as further innovations for the milking parlour.

BouMatic is dedicated to ensuring that dairy farm producers throughout the world have the ability to produce the highest quality milk most efficiently, profitably and responsibly. ■

boumatic.com

Flexible and functional solutions for sheep and goats

Milkplan SA, Greece

Over a thousand farms in Greece use Milkplan systems daily for milking their sheep and goats, and hundreds more worldwide. The company's success in sheep and goat milking systems derives from their flexible and ergonomic design as well as their equipment for quick and easy milking. Their last big project, Albustan farm, is not only one of the biggest in UAE but also one of the largest in the world. It was designed to ensure maximum performance and energy saving favouring the farm's high profit-making potential as well as its future sustainability.

Feeding

In order to ensure the right feed intake, feeding should take place in a comfortable environment and the amount of feed should be distributed equally and uniformly. For the first 2,000 sheep and goats of the Albustan farm, Milkplan installed 4x80m feeding belts, so that employees will not have to dispense feed along the barn. Besides the simplification of the feeding process, the MP feeding belt offers secure locking per site, thus facilitating the marking and vaccination processes. Another great advantage is the fact that employees do not have to walk along the feeding area in their shoes which tends to be too risky in terms of microbes and disease contamination. Following animal well-being recommendations and their experience in the field, Milkplan laid special importance on the neck width as well as the height of the belt so that the whole system meets exactly the needs of the herd.

Animal welfare

Special arrangement of the rest area protects animals from stress, infections or injuries and contributes to the barn hygiene. For this, Milkplan's technicians paid special attention to the barn's design so as to ensure the animals' smooth movement, comfort and welfare. Ergonomic and convenient drinking troughs were placed at easily accessible points to facilitate the herd's daily life.



Milking

For the needs of the milking parlour, the team chose the MP Armektron F4A so that the highest percentage of productivity will be reached in the least time. It is designed for 24/7 operation while assuring milk quality from teat to tanker. Adaptable to any space requirement thanks to its flexible and ergonomic design, MP Armektron F4A offers comfortable movement for the animals as well as minimum labour. Its equipment guarantees maximum flow and less stress to the animal, facilitating quick and smooth milking.

Herd management

To increase herd productivity, enable breed specialisation and improve individual animal production, MP Armektron F4A was installed with an electronic herd management system so that automatic data collection is possible. The accurate and reliable database generates analytic reports needed for decision making and efficient herd management and genetic improvement.

Cleaning

Appropriate cleaning of the milking parlour is necessary for its efficient operation as well as its long durability. That is why the choice of a suitable washing system is highly important. MP Armektron Pulse & Wash 2to1, the innovative automatic washing system by Milkplan, meets all CIP requirements and features applications for automatic hot and cold water supply, time/quality/temperature setting and control, washing cycles and drainage control as well as unlimited program options for any farm. Programmed through a user-friendly digital screen, it offers effective washing combined with minimum water and detergent consumption as well as reduced operating costs. Besides, MP Armektron Pulse & Wash 2to1, provides full electronic pulsation control ensuring pulse signal precision, udder health maintenance and excellent system stability, while at the same time guarantees minimum vacuum consumption.

Milk cooling

A highly important factor for the maintenance of the milk's quality is the process of cooling so as to avoid both the development of bacteria and the increase of milk acidity (pH). At Albustan farm, right after milking, the milk is transferred in MP Powertanks to reach the appropriate temperature and maintain its characteristics unchanged. The appropriate milk cooling tank is the only reliable way to protect the capital of the milk producing farm. MP Powertanks' special design and their evaporators' diamond weld pattern ensure direct dissipation of the milk's heat as well as energy saving and zero coolant leakage.

Sustainability

Having in mind that profitability is the key customer benefit; the aim is to get more milk per hour and of a better quality. However, exemplary farm management presupposes the actions of making farms more attractive for employees, giving farmers more time to drive their business and allowing them to focus more on animal welfare aspects.

About Milkplan

Milkplan operates in the field of farming technologies and equipment designing, manufacturing and selling. The company holds a leading position in the Greek market and it ranks among the biggest companies of the livestock field at an international level. Guided by quality, innovation and consistency, Milkplan exports to more than 75 countries worldwide having over 85% international sales. With 30,000m² company-owned manufacturing facilities, state-of-the-art equipment and technology, advanced industrial know-how and fully certified manufacturing, Milkplan offers flexible and functional turnkey solutions for the construction and effective operation of modern livestock units ensuring high end-user efficiency. ■

milkplan.com

Not only a milking parlour; a fully integrated system

Milkline, Italy

In the Town of Taiki – Hokkaido Island, Japan – three farmers determined to reach a turning point for their business, decided to merge their three small dairy farms into one single company with about 1,000 cows in lactation. The new born dairy farm was named Ocean Link.

This joint venture was supported by the Japan Agricultural Cooperatives Churui, a Cooperative Society that deals with supporting, developing and managing the constitution of big size farms formed by the union of small to medium size dairy farms.

The key aims of Ocean Link were to maximise milking efficiency and milk quality, ensuring optimal comfort for both animals and operators. Specifically, due to the high number of animals to be managed and controlled, an effective and consistent monitoring of the udder and teat health was required. Moreover, as the future perspective was to increase herd size, a solution that allowed a corresponding increase in output and faster cow throughput was necessary.

After spending time evaluating the wide range of systems on the market, the farmers choose Milkline as it offered not only a milking parlour, but a fully integrated system with the most advanced technology. The Milkline's official Japanese dealer Cornes AG planned and managed all the phases of the project providing a complete, highly customised service.

The integrated system that met all the requirements consisted of the Milkline Proactive Rotary Parlour with 60 milking points equipped with the Milpro P4C – the unique milking system on the market that allows quarter-based monitoring and management of the milking process. The management



of the productive process was completed with the monitoring system based on activity and rumination detection and one selection gate to automatically sort animals that need special attention. All these devices were connected to the DataFlow II herd management software, allowing integration and control over the entire productive process.

The Milkline Proactive Rotary Parlour is a parallel external rotary milking parlour, developed to obtain maximum performance. The cows step onto the platform individually and directly in the proper milking stall ensuring a continuous and regular cow traffic flow, thus reducing competitive behaviour among the animals. In this way cows feel quiet, safe and comfortable.

The Milkline Rotary platform provides excellent working conditions for the milkers and makes the milking process easy and smooth as the operator can perform all milking procedures with minimum movements required, assuring a consistent routine. Three monitors were cleverly installed in the milking parlour so the milkers could see in real time events/faults/treatments for each animal, ensuring them a constant overview of the milking process. Moreover, thanks to the touch-screen data terminal they could record important information directly from the milking parlour.

The Milpro P4C is the quarter-based milking system with individual quarter pulsation based on milk flow and stop of the milking per single quarter, substantially reducing over-milking. During milking, Milpro P4C also evaluates the milk electrical conductivity per quarter, makes a diagnosis, and signals possible quarter infection in real time 'Mastitis alert', hugely enhancing the detection of subclinical mastitis.

The identification system is based on HR-LD tags that perform real-time monitoring of the health and the reproductive status of each cow by analysing the animal's activity and rumination rate. Thanks to the merging of these important indicators, the system is able to automatically detect the heat and to provide indications about nutrition and health status of the animal 24 hours a day.

To ensure the highest level of automation in managing the herd, the Milkline Selection Gate was installed, which automatically sorts animals according to specific criteria directly from the milking parlour or through the herd management system.

The herd management software DataFlow II automatically collects data from every single animal and from the connected devices – milking point controllers, monitoring system and sorting gates. All data recorded are processed in real time, generating valuable and insightful information to support an effective decision-making process.

Specific alarms and warnings, for example cows in heat or mastitis alerts, can be notified on the farmer's smartphone and displayed in the milking parlour, improving herd management. The DataFlow II user-friendly interface ensures extremely simple consultation allowing early detection of problems for prompt actions.

The idea of a fully integrated system with a unique and reliable referent was a big success and Milkline was highly recommended to Northern Sky, another new big dairy farm born from the joining of five small farms. Also in this case the joint venture was supported by the Japan Agricultural Cooperatives Churui. ■

milkline.com

More dairy cows equals more units on Irish family farm



cow entering the rotary deck. This allows the operator to continue working but also be fully informed about the oncoming cows.

Pearson Milking Technology, Ireland

The O'Keeffe family are milking 350 cows on a grass based system in Callan, Co Kilkenny in the south east of Ireland. They had previously been milking 80 cows and also had beef stock on the farm. In recent years they have increased cow numbers and reduced their beef enterprise.

They are a spring calving herd and are milking their 350 cows twice a day, with an aim to get to 400 cows in 2017. They had been milking in an 8 a side parlour which was taking five hours in the morning and four and a half in the evening. Mr O'Keeffe has great drive and enthusiasm for the future of his dairy unit but could not continue with this present labour intensive solution and it would not allow for growth to 500 or 600 cows in the future. His aim was to install a parlour that could milk 325 cows per hour.

A decision was made to install a new 50pt Pearson Rotary Milking Parlour to future proof the farm; with a performance of 325 cows per hour with minimum labour. The individual rotary bail meant cows would not be bullying each other for meal during milking and the Pearson low sloped bail design allowed a smooth cow friendly entrance and exit onto and off the deck.

Durability

The industrial design of the Pearson double beam undercarriage and nylon roller system would mean service on the rotary deck would be minimal over its lifespan. The use of stainless steel for milk and pulsation pipes kept yearly service costs down and the Pearson narrow bail design allowed more units to be fitted into the shed when compared to other makes on the market.

User friendly technology

There are no keyboards on the front of the rotary bails to get damaged by cows or water, instead there is a simple LED display strip that changes colour depending on the information received when the cow gets identified onto that bail unit. Green is good milk, Red is reject milk and Blue means an attention alarm. There is also a large durable push button for starting the milking unit.

Animal number/milk yield and attention alarms are displayed on the Global Parlour Monitor positioned beside the operator. This is a touch screen panel allowing an overview of all the animals on the rotary deck and gives total control to the operator to make decisions on the attentions alarmed, like separating cows or registering illnesses or just bringing that cow around a second time to let the operator view her again. The Pearson Voice alarm system was installed, this system puts out a voice message beside the operator letting them know of any attentions with the



Herd management

To reduce another job from the operator during milking the Pearson Auto feed system was installed. Two feed types were required and are activated by an ear tag identification system. Once identified coming onto the parlour the cow gets the relevant mix from each meal feeder dispensed to her. With the Ceres management software controlling the feed units the O'Keeffe family can choose to feed per group/feed to yield/feed to lactation days or steam up and steam down cows depending if they have just calved or drying them off.

To enable expansion on this farm a 12 metre by 60 metre collecting yard was constructed allowing cow numbers to increase to 600 cows if local land became available. To bring the cows up this large collecting yard a Pearson Voyager Crowd Gate was installed. The crowd gate monitors the cow flow through the rotary and automatically moves forward at the relevant times to keep cow flow to a maximum. Cow handling on the exit of the rotary was also very important so a three way sorting system was installed. These items gave the milking operator total control of cow flow in and out of the parlour during milking.

Animal hygiene

As cow numbers increased on the farm, so did the danger of some of the bought in animals perhaps infecting the rest of the herd with unseen diseases. To reduce this occurring the O'Keeffe farm installed a Pearson Cluster Flushing system onto the rotary. Once the cluster is removed from the cow it is automatically rinsed out and disinfected leaving a clean cluster for the next cow to be milked. Also installed was an automatic teat sprayer near the exit of the deck. This ensures the cow's teats are treated with teat spray before leaving the deck preventing infection into the open teats on the way back to the paddocks.

pearson-international.com

Robots prove the perfect solution for west Wales dairy farm

Fullwood, UK

Linley and Marian Griffiths farm 200 acres in west Carmarthenshire, Wales, running 120 dairy cows plus followers on an entirely grass-based system. The Griffiths rely 100% on family labour, with Marian's 80-year old father, Gerwyn, still actively involved in rearing the farm's young stock. Their son, William, 20, has also joined the farm business, and has provided some of the impetus behind a major upgrade to the farm's milking infrastructure.

"We were historically milking through an eight-abreast parlour originally installed in 1967," Linley describes.

The old parlour was updated in 1998 to include ACRs (automatic cluster removers), computerised feeding and milk meters, and the Griffiths family made subsequent improvements four years ago by introducing activity monitoring pedometers to improve the herd's fertility.

Despite the improvements, even with both Linley and Marian in the parlour, each milking was taking a minimum of two hours to complete. The couple were therefore keen to install a new system which would not only speed up the milking routine, but which would also future-proof the farm for William's career.

The Griffiths had previously ruled out a herringbone parlour simply because there wasn't enough space within their existing buildings.

"I was also looking to reduce the effects that the twice-daily milking routine was having on my hands," Linley adds. "I suffer from Raynaud's disease which causes severe pain in my hands and fingers when they get cold and wet. I've been interested in automated milking systems since the first robots were introduced to the UK in the early 1990s and saw them as a way of ticking all our requirements." Two Fullwood M'erlin robots have therefore been

The cows at Blaencorse took to the robots exceptionally quickly and have responded to more frequent milkings by giving improved milk yields.



Cows have 24-hour access to grazing during the summer but are still averaging 2.5-2.7 milkings per day.

installed within the area previously occupied by the abreast parlour's collecting yard.

Both robots feature a twin-exit design that allows cows to be directed back to the cubicle house and feed barrier, or diverted into a small holding area for veterinary attention.

"That feature was one of the main reasons for choosing the Fullwood machines," Linley continues, "plus the fact they are so quiet when operating thanks to an all-electrical milking arm. Other systems use pneumatic air to move the cluster which can be noisier and more intrusive, especially for timid cows."

Training the cows to use the robots turned out to be far simpler than Linley and Marian anticipated. "We had prepared ourselves for months of physically pushing the cows into the robots," Marian describes. "But by the third day the vast majority were using the robots voluntarily. It was simply a case of using the touch screen panel on each robot to guide the cups onto the teats for the first time. After that, the robots were able to refer to each cow's previously stored teat co-ordinates to quickly and easily attach the cluster."

Marian and Linley's daily routine starts at the same time as it always has, but now finishes earlier thanks to the extra time not spent in the parlour. We now have more time available to walk through the cows, check for signs of bulling and keep on top of routine jobs such as foot-trimming. It is a more relaxed, more productive environment for us and the cows."

Being situated in south west Wales means grass grows in abundance at Blaencorse Farm. As such the herd grazes from the end of March through until mid-October, with 24-hour access to fresh grass during the summer.

"We've installed a segregation gate in the cubicle shed to prevent cows going outside if they are due to be milked," Linley describes. "During the robots' first winter, when the cows were housed, we were averaging 3.3 milkings per cow per day, with the high yielders reaching five or more milkings. Even with 24-hour access to grass the herd is still averaging between 2.5 and 2.7 milkings per day. The increased frequency has had a direct impact on productivity, with milk yields rising during the first six months from 9,000 to 9,300 litres per cow."

These yield improvements have been achieved without any additional feed inputs: "Previously we were feeding 4kg of blended feed per head. This year we are down to just 2kg. We are feeding the same amount of parlour cake, but because the robots are able to identify each cow individually, we're able to target feed according to yield. As a result, our peak yields have improved, with our record daily production for an individual cow peaking at 67 litres, with several other animals easily achieving in excess of 50 litres per day."

The M'erlin robots have proven to be the perfect solution for the Griffiths. "We have installed a new milking setup with minimal disruption to the herd and seen a good increase in milk yields. Our working day is more productive and the farm is now set up for a long future in milk production." ■

fullwood.com

Ensuring an optimum environment for animals and people

Waikato, New Zealand

The new dairy on the YiLi Group Hua Yuan farm in China reflects the Group's high standards for creating the optimum environment for animals and people.

The Inner Mongolia Yili Industrial Group (YiLi) is China's largest dairy producer and the 10th largest dairy company in the world. The Group owns a large number of dairy farms in China varying from small family units up to large intensive 24 hour operations.

The Hua Yuan farm is located in the Heilongjiang Province, 250km north west of Harbin city. Heilongjiang has always been a dairy province but is enjoying a resurgence as larger, more intensive farms are developed.

According to the Waikato Milking Systems' Country Manager for China, David Morris, planning for the Daqing farm began around two years before the farm became operational.

This is nothing unusual. The YiLi Group has very high standards across all its operations and particularly in relation to the housing and care of animals and the creation of an ideal working environment for its people.

One example of this commitment can be seen in the Group's requirement that the approaches to, and on, the milking platform have to be covered in rubber to provide a cushioned surface for the cows to stand on. This is a response to the fact that hooves tend to be softer with animals which live indoors.

David Morris said that he and the company's Chinese dealer, Beijing KingPeng Global Husbandry Technology Co Ltd, worked with YiLi throughout the two year planning and construction phases of the farm.

"The climate in Daqing is relatively mild during summer and very cold in



winter so the walls and roof of the cow barns and the milking parlour are insulated.

The cows live indoors all year round and are fed a total mixed ration diet of grain, grass and silage mostly grown in the Heilongjiang Province.

An 80 bail Waikato Milking Systems Orbit concrete rotary was selected to milk the farm's 2,200 cow herd equipped with SmartECR (automatic cup removers), bail gates and AfiMilk Herd management.

The Orbit rotary platform provides operators with a clean, fast milking environment. Cow flow on and off the platform is excellent and the milking equipment is easily accessible – all factors which were important to YiLi.

Waikato Milking Systems has an office and warehouse in China and a team of full time installers headed by Installation Director, Jim Duan, who worked with KingPeng on the construction of the dairy.

Their dairies and systems are in demand in China so their New Zealand trained Chinese team is very thorough and highly specialised to provide a high consistent standard to each and every dairy.

Jim Duan and his team, supported by a technician from New Zealand, provided support and expertise leading up to the commissioning of the dairy in July 2016.

Training of cows for a large operation like this can be challenging because the animals are of varying ages with varying backgrounds. Many are heifers so some time is always allocated to training them to walk on and off the rotary platform. However, the YiLi team reported that the cows settled to the new environment within a couple of days and flow on and off the platform very easily.

The Daqing herd is Friesian of mostly New Zealand origin and is milked three times a day all year round.

Around five people operate the rotary, each with a specific role in the 'spray and wipe' process which is common in China to enhance hygiene. One person sprays the udder when the cow comes onto the platform, the next wipes the teats before two people cup the cows. At the end of milking the cups are removed automatically (by the SmartECRs) and the final member of the team dips the teats before the cows leave the platform.

David Morris said YiLi is very impressed with the new dairy.

"From day one the platform and milking system performed smoothly and consistently with no problems. The staff have found the operation of the milking system to be logical and easy and find the milking environment to be quiet, light and airy.

"I was impressed with Yili Group from the first time I met with them at the Inner Mongolia Hohhot Headquarters. Their attention to design detail from cow flow to the equipment function was clearly a top priority in their brief for the project and I am delighted we achieved that."

waikatomilking.com

All-round system for all aspects of dairy farming management

Afimilk, Israel

When two well-known Israeli dairy farms on Kibbutz Gazit and Kibbutz Mishmar Ha'emek decided to merge under the Nofim Farm co-operative, the stakes were high. The project involved consolidating the two farms (with 400 cows each) into a new, cutting-edge dairy facility located at Kibbutz Gazit – a complex undertaking that required the careful planning and execution of every single aspect at the new farm.

The dairy farm at Gazit already had proven experience with Afimilk farm management solutions, and after additional market research and careful consideration, the Nofim Farm co-operative decided to go with a fully integrated, state-of-the-art Afimilk system at the new facility. Based on the requirements, an end-to-end solution was installed that combined an Afimilk R600 60-point rotary dairy system with the AfiFarm 5.2 herd management solution, AfiMilk MPC Milk Meter, AfiLab Milk Analyser and AfiMilk MCS (Real-Time Milk Classification Service).

Calm and safe milking environment for the herd

Ideal for large-scale 24/7/365 dairy farms, the robust, yet automated and easy-to-manage, Afimilk R600 rotary dairy system creates a calm and safe milking environment for the Nofim Farm's large herd. With a record rate of up to 500 milking cows per hour, it maximises parlour throughputs while achieving optimal milkout for cows and improving overall milking quality.

The wide-open entrance design allows for quick, efficient loading of the cows onto the milking platform, and the intuitive exit design makes it easy for the animals to leave. Moreover, the herd manager can control the rotary speed based on the needs of his herd; and adjust it using the data accumulated by the AfiFarm management interface, which includes cow ID and recognition, milk yield, milk quality, constituents, and automatic sorting.

Everything needed for safe and efficient milking

But that's not all. By integrating Afimilk's best-of-breed solutions, Nofim Farm benefited from a comprehensive dairy farm management solution that



incorporates everything the farm needs to safely and efficiently milk its cows.

With the In-Line Milk Lab – which pairs the industry-leading AfiMilk MPC Milk Meter with the AfiLab Milk Analyser – the farm benefits from integrated milking point analysis and control. This enables the timeline identification of changes in milk production and solids for the earlier detection of health problems; the early detection of nutritional deficits and poor feed quality; the prevention of milk contamination by ensuring proper wash procedures; and an improvement to the entire milking environment for better overall herd health and management.

The AfiMilk MCS further enhances the solution by analysing each pulse of milk in real-time at the milking stall according to its coagulation properties. Based on the results, the milk is separated into milk for making cheese and milk for fermented or other fluid milk products, and channelled to designated bulk tanks on the farm. This significantly increases cheese production yields and streamlines operations and logistics on the farm.

End-to-end dairy farm management solution

All of the Afimilk technology is managed by the AfiFarm 5.2 software – the ultimate herd management tool. The fully integrated AfiFarm dairy farm management software collects information about each cow and gives dairy farm managers access to an accurate and comprehensive real-time view of their herd's health and fertility, milk quality and productivity, calving status, and more.

The real-time data is stored, analysed and displayed in reports on a user-friendly dashboard that, together with decision-supporting tools, enables dairy managers to make the best possible decisions with regard to milk production, components, animal behaviour, health conditions, parlour equipment, nutrition, and more. In addition, the farm managers can stay connected and updated at all times with notifications to their mobile phones via SMS or the Farm Notification app.

With the end-to-end Afimilk dairy farm management solution, Nofim Farm benefits from a labour-efficient milking parlour, a consistent daily cow routine and work routine, a high level of efficiency and throughput – and an all-round, world-leading solution that takes every aspect of dairy management into account.

afimilk.com



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