

Milking 'wizards' work their technological magic

Robots relieve parlour pressures

An automatic milking system is saving time and money, as well as increasing milk hygiene and yields and cow health, on one Cornish unit. Read on to find out why and how the robots suit the management set up – and the staff – so well.

text Rachael Porter

Expanding cow numbers, a tired parlour and labour scarcity – three factors that saw one Cornwall-based herd take the plunge and invest in two robotic milking machines. And they're factors that are familiar to many producers who are increasing herd size up and down the UK. But why did Graham Duke plump for robots, rather than any other type of parlour? The investment was certainly needed to solve the puzzle of how to relieve the constraints imposed by his old 12:12 herringbone parlour.

"But I liked the added bonus of increased milk yield per cow, due to more frequent milking, and that labour costs – and the worry of finding and keeping skilled milkers – would also diminish," he says.

Additional land

In September 2004, Graham, who farms in partnership with his wife Jill at South Bridgetown Farm near Launceston, took on an additional 40 hectares, extending his tenanted farm to a total of 134 hectares. The extra land enabled him to expand his herd from 140 to 220 head. But with a cramped and worn out parlour, the twice-daily milking regime was tough going.

There had been some parlour upgrades, but it still only had a throughput of between 50 and 60 cows per hour. As a consequence, Graham was spending as much as eight hours per day in the parlour. "We had plans to improve the

milking parlour by building a new dairy on a green-field site adjacent to the existing farm buildings," says Graham. "Our plans featured enough capacity to house, feed and milk 350 cows through a rapid-exit parlour. As an alternative, we also thought about installing four robots to milk the high yielders, with the remainder of the herd going through the existing herringbone."

But unfortunately these expansion plans coincided with the start of the credit crunch so Graham put his plans on hold while he re-assessed his borrowing options. In the meantime he looked for other ways to relieve the pressures that high cow numbers were placing on his existing setup.

Then, in spring 2010, the family had the opportunity to take nearby Buttern Farm on a 10-year farm business tenancy. Unable to transfer the existing herd from South Bridgetown due to TB restrictions, 90 cows were purchased and transported to Buttern Farm and put under the management of Graham's eldest son, Lloyd.

Cow numbers at Buttern Farm currently exceed 170, which has enabled the herd at South Bridgetown to be downsized, with 130 cows now being milked through two Fullwood Merlin robots that have replaced the old herringbone parlour.

The Merlin machines were commissioned in October 2010 and have revealed a number of key benefits over the farm's traditional herringbone system.

"The robots have improved working conditions for the cows and staff at the unit. They have also reduced our labour requirements and are paying for



Graham Duke: "Average yield has increased to more than 9,000 litres"

themselves through lower staff wages," explains Graham.

"We've also seen milk yields increase by more than 800 litres per cow since we switched to fully automated milking, primarily because the cows are being milked more frequently."

The low yielders at South Bridgetown are milked as little as once per day, but the high yielders are regularly achieving 4.5 milkings per day. The Merlin robots have also contributed to a flatter, more consistent milk production curve, with cows and freshly calved heifers giving more milk for longer.

Less 'peaky'

"Overall the herd is averaging three milkings per day and we have seen average yields rise from 8,200 litres per cow to more than 9,000 litres, with the highest yielders giving close to 12,000 litres," says Graham. "And production is less 'peaky', largely due to more frequent milkings and also because we are using the robots in conjunction with out-of-parlour feeders, which allow us to control each cow's individual feed intake."

Udder health and milk quality have also improved. The herd's somatic cell count is down to 170,000 cells/ml. "Great news since it was previously always above 300,000 cells/ml. This is partly due to the

robots, but also a result of addressing the over-crowding issue by splitting the herd between two units.

"The same can be said for mastitis. We used to see a lot of Staph and Strep cases, but it's rare to see either now," says Graham.

Cow welfare and longevity have also improved since the robots were installed – and so has Graham's quality of life. "The replacement rate is falling and the cows are happier now they can choose when to be milked. My daily workload is also more manageable and I enjoy life more – I have more freedom. I can go to watch my sons play rugby on a Saturday afternoon and I can stay for drink in the clubhouse without having to rush back to milk. I'm not watching the clock all the time.

"The robots weren't installed so that I could spend less time at work, but they do give me the flexibility to spend time with my family and to help Lloyd at Buttern Farm. More importantly, they also free-up a valuable time to allow me to focus on vital aspects of herd

management, including health, foot-trimming, fertility and heat detection." Graham says that it is difficult to say exactly how much money each robot has saved his business, but labour costs have fallen dramatically due to no longer needing relief milking support, and his workload is also more sustainable.

"One of the biggest costs on any dairy farm is labour," says Fullwood's Rob Waterfield. "If you can cut your monthly fixed costs without having a detrimental effect on cow health or milk quality, your profit margin will instantly improve. Robotic milking allows this key change to be made and Graham's business is benefitting as a direct result."

Grazing plan

And he's not finished yet. He'd like to graze some of the herd – probably just the low yielders – possibly next year. But that will require a little more planning and the purchase of a 'grazing gate' that will allow only cows giving less than 30 litres, for example, to leave the cow

house and head off to pasture. "Our grazing isn't exactly close by, but I'll figure something out." Graham says the switch from conventional to automatic milking was a 'challenging but worthwhile' exercise. "As soon as we'd trained the cows to use the robots we knew we had made the right decision," he says.

He had worked with robots before, as a herdsman on a unit back in 2001. "I was impressed with them then, but the technology is even better now. "I never imagined I'd be able to afford to milk my own herd through an automatic system, so I'm thrilled to be doing it now."

It proved to be a difficult installation due to space constraints at the unit, but he says the company worked closely with him to make sure the cows had easy access to both machines. "We had to maximise cow flow and make sure there were no bottle necks. I think the increased milk yield and productivity of the herd is proof that we certainly managed that." |



Automated system: robots get on with milking while Graham is free to focus on other areas of dairy herd management