Grass silage and robots drive up milk production

Hugh Miles has spent a lifetime breeding dairy cows, as did his father and grandfather before him. However, only over this winter (2019/2020) does he feel they have reached their full potential, with a combination of the highest quality grass silage he has ever made and a state-of-the-art milking system driving their performance.

What is perhaps more remarkable is that they've achieved their performance with just a single forage – without the use of maize or wholecrop silage and without any soya in their total mixed ration.

Farming with his family at Withamhall Farm in Witham Friary near Frome in Somerset, Mr Miles says much of his herd's lift in performance – which now runs at a 12-month, 305-day rolling average of 12,500 litres at 4.24% fat and 3.55% protein – is due to the silage they are fed.

"They've been milking really well through the autumn and winter, and some of this has to be due to the silage," he says.

His confidence comes from the fact that when the herd was switched to the new silage last July, their production increased immediately by one litre/cow/day.

"Nothing else changed," said Mr Miles. "And what's more, they were going through disruption at that time, with building work for the new robots going on in the cubicle house all around them."

The silage to which he refers is the first cut he has made using Safesil Challenge, one of the top-of-the-range preservatives from the Kelvin Cave stable.

"I knew Kelvin Cave had an additive we should probably be using, so last April, I called David Warner [Somerset and West Dorset area manager] who I've known for many years," he says. "We had been using another product for some time and it was doing OK, but I could see it wasn't getting the full potential out of the cows."

The switch to Safesil was made last season and everything else about the silage-making remained exactly the same as before.

Dairy farmer, Hugh Miles (pictured below) says his 2019 silage has the best analysis he has ever achieved.

"We take two cuts which we feel gives us best value for money from our contractors," says Mr Miles. "We take first cut in the third week of May and second cut at the end of July."

The usual system was followed which involved mowing after midday and until midnight, wilting for 24 hours, raking the grass about an hour ahead of the forager and bringing the grass to the clamp.

"We use Ashton Farms Ltd as our contractor and they do a great job," he says. "They have two people on the clamp; one with a loading shovel and the other with a SilaPactor to compact the grass, which is quick enough to keep ahead of the trailers bringing in 16-18 tonnes every three minutes.

"Within half an hour of the last load we have the clamp sheeted, which is important as it excludes the air and starts the fermentation process as quickly as possible."

Two months later, the first-cut clamp was opened and the immediate striking feature was its aroma.

"It smelt absolutely lovely – certainly better

than normal and so sweet. You could smell it from quite a distance from the clamp," says Mr Miles.

An analysis confirmed its quality, at a massive metabolisable energy (ME) of 12.1MJ/kg DM and D-value of 75.8.

"We were delighted with this as it's the highest ME we have ever had. We've had high 11s but never 12, and it's not as if it

was cut in April, but actually quite late in May," he says.

Dry matter target is always under 30% and Mr Miles was pleased with this, at 28.3%.

He says: "At under 30% the ration is palatable and succulent and it's easier for the cows to eat."

Fed through a Kuhn tub mixer in a TMR comprising ground maize (5kg/head), protected rape meal (5kg/head), grass silage (50kg freshweight) and seaweed with Himalayan rock salt, dry matter intakes immediately rose, driving the lift in production.

"We feed the TMR in troughs which we clean once a week, and it's noticeable that over this time the silage remains completely cold," he says. "Under the previous system it would have heated up within 48 hours a nd inevitably lost quality and palatability in that time."

Two new-model DeLaval VMS V300 robots came on stream around a month later in early September, by which time the cows were perfectly primed to respond to the additional milkings. And going from two milkings a day at 12-hour intervals to an average of 3.5 under the new voluntary milking system saw a further impressive lift in performance.

"It was predicted that milk would increase by around 13% but our cows' yields just kept going up," he says. "DeLaval couldn't believe it – at one point they were up by 20%."

With cows still learning their way and no longer pushed into robots, the increase has currently settled at around 15%. However, the highest yielders in the year-round calving herd are still producing a remarkable 90 litres/day.

Bucking another trend has been concentrate use which has not increased since the robots came on stream. With 2.5kg of a high starch, 18% protein concentrate dispatched for each milking visit, cake consumption has fallen from the previous 12kg per day. However, with slightly more maize and rape now fed in the TMR, total concentrate consumption has remained stable at 0.40kg/litre.

Milk from forage has also increased from 2,900 litres a year ago to an impressive 3,200 litres today.

"We're aiming to drive this higher as it's strongly linked with profit, and we are confident we can do so with this system," he says.

Health has also improved with the new system, with displaced abomasums virtually non-existent, milk fever cases rare and fertility on target. Cell counts run at 100,000 cells/ml, Bactoscans have fallen to 11 and there have been only two cases of mastitis since September.

"I am really confident that all links in the chain are now pulling in the right direction," says Mr Miles. "I have spent a lifetime breeding cows and as a family we're in it for the long haul.

"We have no intention of wasting what we have done and now we feel we are reaping the rewards. And yes, we'll be using Safesil Challenge this year; I have ordered it already!

"I knew it was expensive at the outset but was prepared to try it for a season to see. And we can certainly see!" he says.

Withamhall Farm facts

- Lowland organic farm of 325ha (800 acres) and 1,000 Texel x Lleyn ewes
- Family-run farm of 123 pedigree Holsteins (Withamhall prefix) calving all year
- 12,500 litres at 4.24% fat and 3.55% protein (12-month, 305-day ave)
- Silage compacted with SilaPactor; Safesil Challenge used for first time in 2019
- Highest quality silage ever made at over 12MJ/kg DM (D-value 75.8) in 2019
- Production increased by 1 litre per cow immediately on switching silage
- Production increased further on move to (ave) 3.5 milkings per day through robots

Safesil Challenge – top of the range for lower DM silage (<30%)

Safesil Challenge and its partner product, Safesil Pro, comprise blends of food-grade preservatives.

Unlike other silage additives, they kill all the major spoilage organisms found in silage.

Safesil Challenge is designed for lower dry matter silages, where the risk of a poor fermentation and consequent high fermentation losses is greater. Poor fermentation, caused by the activity of enterobacteria and clostridia, produces undesirable fermentation products, dry matter losses, the loss of valuable nutrients in the clamp and a reduction in palatability.

For higher DM silages (up to 50% DM), more prone to aerobic spoilage, Safesil Pro is recommended.