



Miller family

This renowned herd is taking breeding a step further by introducing the latest genomic technology to test all females and speed up the rate of genetic gain.



Herd size:	440 cows
Average yield:	13,790 litres
Calving interval:	389 days
Unit size:	336 hectares

Heifers from your best females – every time. That dream is now a reality on the Miller family's Evesham-based unit. The cost of genomic testing has become more competitive – about £32 per animal compared to around £100 just a few years ago – and since 2016 Paul Miller has been taking samples for genomic testing from all his dairy heifer calves. And, he says, he can already see a difference in his herd, due to using genomic sires, and he is excited about the herd's future.

Paul runs the Shanael pedigree Holstein herd, in partnership with his parents Mike and Shan Miller and brother Steven, on a 336-hectare tenanted unit in Worcestershire.

And the former NMR/RABDF Gold Cup winner says he's been using genomic testing for 10 years now: "Just on the odd 'special' cow or heifer to start with. But I really wanted to test all my females, but it was just too expensive," he says.

Genetic progress

The launch of NMR's GeneTracker has changed that, and he now tests all heifers as calves – before they're six months old.

"This helps with breeding decisions and it also gives me a good indication of the genetic progress being made, well before those heifer are in calf or calve and join the milking herd."

More precisely, it helps Paul to decide which heifers he'd like to breed from and which he'd like to use for IVF work. "We have done some ET work in the

Identifying the best females to breed the next generation of replacements

Selecting the cream of the crop

The latest genomic technology is helping one of the UK's leading dairy herds to increase its rate of genetic gain, reduce heifer rearing costs, and produce a more uniform herd. We spoke to the Worcestershire-based family to find out more.

text **Rachael Porter**

past, but we had limited success. So we want to try IVF.

"It's expensive, but we're looking to see if we can do it in a more commercial way. It should result in more heifer calves from our best females.

Best females

"The plan is to use the best 1% of the herd as IVF donors; use sexed semen on around 39% of the herd, to ensure that we have enough herd replacements; and the remaining 60% of the herd would be surrogates for the 1%.

"It could even be just 0.5% of the herd that we carry out IVF work with. The finer details are yet to be finalised."

Using GeneTracker will ensure that the

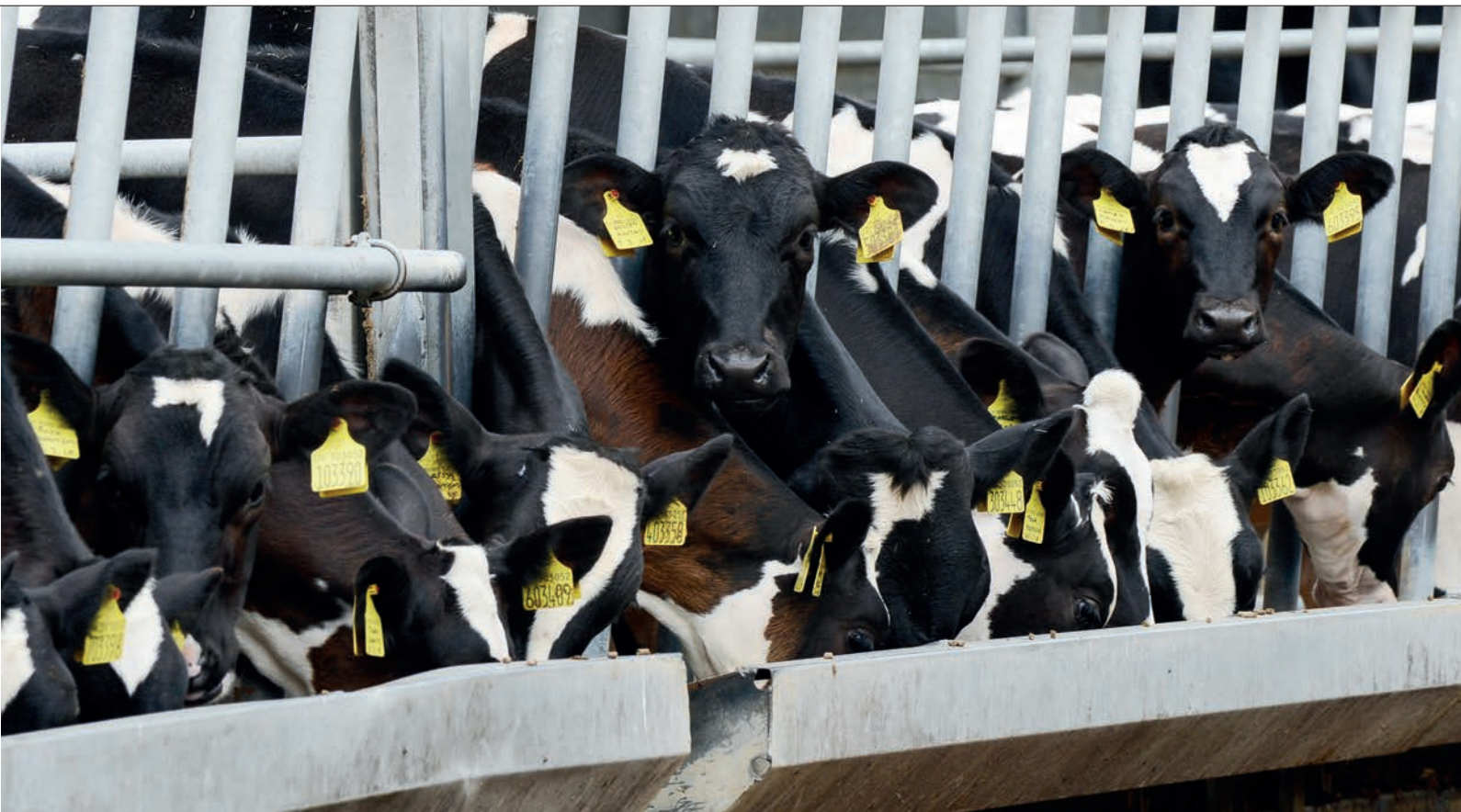
Millers use their very best females, to maximise the rate of genetic gain and breed some fantastic cattle and, of course, maximise the return on their investment.

The herd, which is housed all year round, comprises 440 milkers, plus 350 followers, following a recent push for expansion. After a period of consolidation, the Millers are looking to expand again – probably up to around 600 milkers, which will mean investing in another 200-cow cubicle shed.

He's not concerned about having enough replacements: "Sexed semen technology has come a long way and it'll be exciting when we are ready to grow because we'll be using our own replacements and they

Tag test: samples are taken from young heifers for genomic profiling





Heifer replacements: in the future, all dairy breeding will be carried out using only the very best females in the herd

will be heifers from our best females.” The herd is currently milked three-times-a-day through a 28:28 herringbone parlour, which he says has the capacity to milk more cows.

So no additional investment will be required here, if cow numbers expand.

“We have recently installed LED lighting in all our cow housing. We wanted to ensure that the milking herd, which is housed all year round, had at least 18 hours of ‘daylight’ in a 24-hour period.

“We were looking for extra milk – that’s what all the research and advisers promised. And, so far, we think we’re seeing an extra 1.5 litres per cow per day.”

The NMR recorded herd, which featured in the top 10 of this year’s annual production report ranking, is averaging 13,790kg of milk, at 3.73% butterfat and 3.21% protein, with a somatic cell count of 156,000 cells/ml. Calving interval stands at a respectable 389 days.

Improved fertility

Paul is pleased with that figure, particularly since fertility has been a focus for improvement during the past few years.

“We’ve made a real effort to improve fertility. We’re calving all year round and we’re more aggressive in checking for heats.

“We have increased routine vet visits to every week, monitoring individual cows and trends through InterHerd.

“Our vet and consultant can also access this data and the reports so we’re all working from the same information.”

He’s not looking to shave more days off the interval – just ‘tighten’ it.

“That figure is the average for the herd, so I’d just like to have fewer cows that are way off being anywhere close to that figure.”

He’s also keeping a close eye on milk solids, since that’s what his milk contract, with Muller, pays for.

“We used to be paid on a liquid basis, but that’s changed now. We’re currently producing around 984kg of fat and protein per cow – the result of breeding and feeding. So that, again, is where GeneTracker comes in.

“We can use the genetic information to help us focus on breeding cows with improved butterfat, as well as good health and yield.”

The genomic testing will also help the business when the family is, once again, in a position to sell surplus heifers.

The Shanael herd already had a good pedigree reputation and Paul thinks that this will add another layer of invaluable information and help to raise the profile of the herd even further.

“I can see a time, when we’ve increased

the size of milking herd and no longer need to breed so many replacements, when we’ll use beef sires on the lower genetic merit proportion of the herd.

“All our replacements will be top quality and we’ll be in a position to sell some of them.” He says that, at the moment, they need to rear between 130 and 140 heifer replacements each year.

“And heifers are expensive to rear, so ideally we just want to rear the very best ones. That will be the norm on our unit in a few years.”

Good health

When it comes to breeding decisions, Paul says that sires with good health traits, that score low for SCC and high for lifespan, make it onto his shortlist. “It all has to be there. We’re looking for high milk yield too and at least +500kg on constituents.”

As for type – he says that’s a funny one. “If a cow completes several lactations and she’s healthy then she should, by default, be a good cow.

“I do look at type, but I also want efficiency. It’s no good having a ‘pretty’ cow if she doesn’t milk well. Feet, legs and udders are all type traits, but they’re also strongly correlated with health.

“I think if you look to breed a cow with high health traits and figures then you can’t go wrong.” |