

# Dig into **fertility data**

Whatever the system, fertility is a key factor in determining herd performance. Armed with the herd's data, and knowing what can be achieved from probably the industry's best benchmarking report (2019 report just published), can help many dairy teams reach their targets.

TEXT KAREN WRIGHT

**W**hat a difference a decade makes. According to the University of Reading's latest study of 500 NMR-recorded Holstein herds, calving interval at the mid-point is now 401 days, outstripping that achieved by the top 25% in 2010 by eight days. A pat on the back for some, but the top 25% of Holstein herds are now achieving a calving interval of 385 days, which is a realistic target for more herds.

Report authors, James Hanks and Mohamad Kossaibati, highlight an improvement in key fertility parameters across the report's 10 years.

Table 1 shows the proportion of cows served by 80 days and cows conceived 100 days post calving. Both show a marked improvement, with half the herds in the study now performing as well as the top 25% of herds in 2010. "We're now seeing 58% of cows served by 80 days – 12% more than 2010 – and the percentage of cows conceived by 100 days after calving has increased from 26% in 2010 to 34% in 2019," says Dr Hanks. "These are the mid-points in the sample of randomly selected recorded herds. There's some good progress, but there's still some work to be done. In all 10 reports we publish the achievement of the top 25% for all parameters as an achievable target for individual dairy herds."

Pregnancy rates have also improved by 5% and are now higher than the 2010 target. This is the percentage of cows eligible for service 42 days+ after calving that conceive per 21-day oestrous cycle.

"Pregnancy rate is the key parameter here and a true

reflection of fertility performance," says dairy vet Peter May, from Drove Farm Vets, who has used the Reading University benchmark parameters and NMR's InterHerd+ to run the Dairy Early Warning (DEW) group among his dairy producer clients. Monthly DEW reports comparing herd performance with the group and the national figures are a valued management tool.

"Pregnancy rate is a popular discussion point," he adds. "It's a good reflection of herd fertility. The easiest way to improve is to serve more cows in their target service period by improving heat detection."

## Heat detection

Technology, such as heat detection collars and ear tags, will undoubtedly play a greater role here, as well as improving the detection of sick cows. "One of my clients recently had 60 heifers to serve and, by using activity detection ear tags, identified 57 cows on heat within the three-week target. So I only treated three who were not cycling," adds Mr May.

*Activity collars can contribute to better heat detection*



Table 1: Fertility Key Performance Indicators derived from analysis of 500 NMR milk recording herds, September 2018 to August 2019 (source: University of Reading)

parameter	median (2019)	inter-quartile range (25-75%, 2019)	target (2019)	median (2010)
percentage served by day 80	58	44-68	68	46
percentage conceived 100 days after calving	34	25-41	41	26
calving to 1st service interval (days)	81	71-98	71	105
calving interval (days)	401	387-417	387	424
age at first calving (years)	2.3	2.1-2.5	2.1	2.4
conception rate	35	29-42	42	32
percentage service intervals at 18-24 days	37	28-44	44	30
percentage service intervals >50 days	21	15-31	15	32
percentage eligible for service that served	39	28-51	51	27
percentage eligible for service that conceived	14	10-18	18	9
lifetime milk / cow / days (kg)	13.0	10.9-14.9	14.9	10.5



Allflex's Paul Mitcham agrees that heat and health detection related information from this technology, which monitors cows 24/7 through collars or ear tags, can contribute to far better heat detection. "Our data shows 95% heat detection rates are achieved where collars or tags are used compared with around 65% through typical three-times-a-day observation."

Conception rates, though, do not reflect the same level of improvement seen in other fertility parameters. But Peter May admits improvements here are more challenging than that of heat detection. "Overall reducing stress in all its guises – disease, nutritional and environmental – alongside breeding for better fertility is the way forward," he adds. "We need to look at the overall picture and then pay attention to all those little details which together will ensure progress."

### Genomic testing

Progress will continue to come from marginal gains in health status, nutrition and husbandry. "There are great opportunities, particularly through genomic testing of our Holstein females. We can then breed from the best – those who have the greatest potential to achieve the targets set for the particular dairy business."

On a day-to-day basis Mr May looks for the best protocols for each herd so that he can minimise treatments and maximise their efficacy. "Each unit is different and needs its own fertility targets," he adds. "For example, following discussion on farm and with the farm's breeding advisory team, we have extended the number of days before the target first-service period for first-lactation cows in two large high producing dairy herds.

"Records showed that the first-lactation cows were getting in calf before reaching peak yield so by extending the target they will yield better and be allowed to finish growing. Reducing these stresses during their first couple of lactations will hopefully improve their longevity." Improvements will come from using the data, as a team, to implement change.

"We know this works because producers in our DEW club have improved their KPIs for fertility and mastitis parameters at a quicker rate, year-on-year, than the national 500 herds that are monitored.

"We produce a monthly DEW report for on-farm discussion. We also have group meetings to review KPIs to share best practice," says Mr May. "Team work, using data and targets, and being prepared to change is a good formula." |

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Peter May: "Each unit is different and needs to set its own fertility goals"

## Industry signposts

The University of Reading's latest Key Performance Indicator report provides dairy businesses with clear benchmarks and signposts. It includes 38 key parameters for the year ending August 2019 for 500 NMR-recorded herds. Herd size ranges from 45 to 938 cows, with a mid-point of 169 cows, and 61% of herds with 200 cows or less. "This is a large data set that is representative of all milk recording herds, making this annual

report one of the industry's most accurate sets of data," adds Dr Hanks. "It is a random selection of Holstein herds with a range in systems and performance. We rank herds for each parameter and publish the performance of the middle – 250th – herd. This median figure prevents any distorting that can happen with an average, particularly if there's a big range in performance." The top 25% figure for each parameter is

seen as a realistic target for many dairy businesses. "Vets and consultants use InterHerd+ to benchmark individual herds against the report's KPI data and to set targets against the national averages and others in a bespoke group. This becomes the basis of informed management decisions with their producer clients."

Find the report on: [www.nmr.co.uk/software/interherd-kpi-study](http://www.nmr.co.uk/software/interherd-kpi-study)