

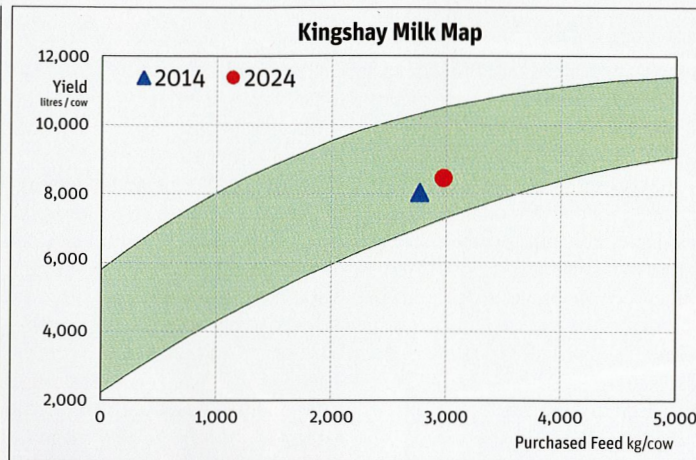
# Improvements in fertility have boosted herd resilience

Dairy farmers facing unprecedented milk price and input cost fluctuations, alongside the phasing out of subsidies, are trying to build in more resilience to their businesses. So how are they managing that? British Dairying finds out.

Modern dairy producers are always looking forward and striving for continual improvement – but sometimes it's useful to look back, and learn from the path already trodden. Kingshay's dairy costings report provides a unique tool to enable that, so what can producers learn from the 10-year trends?

"We can see that dairy herds are utilising data more to measure farm performance, and using technology – including improvements in genetics – to improve herd efficiency," says Kathryn Rowland, Senior Farm Services Manager at Kingshay.

When comparing costs, fertility is a larger cost than mastitis or



Feed efficiencies have improved slightly over the past decade

Kathryn. "Accurate record-keeping is key to monitoring fertility; especially during periods when you are actively serving cows, identifying current performance and providing the opportunity to adjust management in response to inadequate fertility."

**Fertility measurement can be done in several ways:**

- Calving interval - this analyses historical data, providing a picture of what has happened with cows still in the herd.

It's a traditional measure of fertility but culling policy can mask the actual herd performance. It's widely used for benchmarking but should be used in conjunction with a measure of culling for fertility.

- Submission rate - this is the number of cows served as a percentage of the total ready to be served in a 21–24-day period, or an 80-day period for the 80-day submission rate.

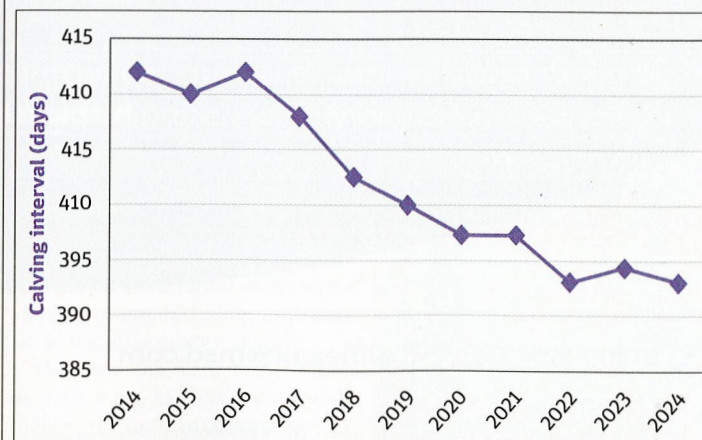
An 80-day typical range is 30–90% and the target should be 85% (95% in block calving herds).

- Conception rate / services per conception - percent conception resulting from each service.

- Pregnancy rate - calculated by multiplying together the conception rate % and submission rate % over 21 days (or 24 days sometimes) i.e. the number of eligible cows conceiving. For example, if the herd conception

lameness. As such, it is where the biggest potential savings can be achieved. Many fertility parameters have seen large improvements since 2014, with the average calving interval decreasing from 412 days in 2014 to 393 days in 2024. The 200-day not-in-calf rate has been halved, decreasing from 25% in 2014 to 12% in 2024.

"These fertility improvements will have contributed to the increases in yield per cow, but additional factors including genetic improvements and improved herd health have also had an impact," she says. Maintaining a calving-to-first-service interval of between 60 and 80 days is vital, notes



Fertility has improved markedly, with much shorter calving intervals

rate is 40% and current submission rate is 50%, the pregnancy rate will be 20%. A 10% increase in submission rate will result in a pregnancy rate of 25%.

- 100-day in-calf rate and 200-day not-in-calf rate - these figures are useful as a measurement of the success of a breeding season or annual review.

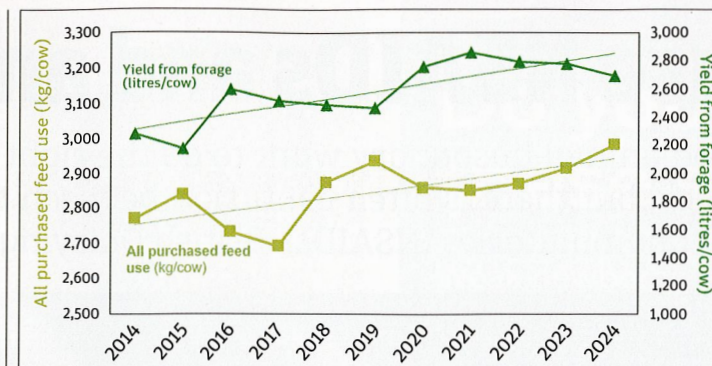
- 100-day in-calf rate: Typical range: 60–95%. Target: 75% (95% in block calving herds).

This assesses how many cows in your herd become pregnant by 100 days post-calving. It describes how many cows will calve within 13 months of their previous calving.

- 200-day not-in-calf rate: Typical ranges: 1–20%. Target: Under 6%. This calculates the number of cows still not pregnant by 200 days post-calving.

This indicates how many cows won't calve within 15–16 months of their previous calving. Most cows not in-calf by this time will be culled as it becomes inefficient to continue to serve cows after 200 days post-calving, unless they are exceptional performers.

Feed efficiency is another measure of resilience, and the Kingshay



Yields from forage have increased alongside total yields and feed use

Milk Map (left) is a useful tool to easily demonstrate this, with the green band showing the curved relationship between milk yields and purchased feed use.

"The 10-year data trend from 2014 to 2024 sees a small increase in feed efficiency for conventional, Holstein/Friesian herds, but mostly a strong rise in yields due to an increase in purchased feed usage," says Kathryn.

The red dot for 2024 is slightly higher, following the curve north-east from 2014, indicating feed efficiency has improved.

Herds that lie on the top of the green band are more feed efficient, highlighting a wide range of milk

yields for herds feeding the same amount of bought-in feed. Average yields increased from 8,010 litres/cow in 2014 to 8,438 litres/cow in 2024. Milk yields and milk prices both reached a low in 2017.

From 2021 onwards, average milk prices have seen a major uplift, reaching a peak in December 2022, but yields have plateaued at around 8,400 litres/cow per year.

Milk from forage is another important indicator, notes Kathryn. The chart above shows the inverse relationship between milk from forage and purchased feed usage.

Total purchased feed has increased over 10 years, from 2,772kg/cow

to 2,981kg/cow. "As milk yields increase, yield from forage has also increased proportionally. This reflects the increase in total milk yield seen over time, but not at the expense of production from all forage (both conserved and grazed)."

Over the past 10 years, dairy businesses have increased their resilience through greater use of forage and improved reproductive management, although not as much as would be expected, she continues.

"Milk from forage increased from 2,280 litres/cow to 2,692 litres/cow during this period, but this is proportional to milk yield increases and largely due to rising purchased feed usage.

"Improving herd fertility, making better use of quality conserved forages and more effective use of grazing in rations (although not a technological advancement, as such) will help control feed usage and costs," explains Kathryn.

"It will also help to lower carbon footprints and reduce the reliance on purchased feed to help maintain milk yields.

"Health improvements will also help feed efficiency and maintain margins over purchased feed."

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