

Dairy Cattle Reproductive Terminology

Overall herd reproductive performance is impacted by more than just what happens at mating time. Getting an accurate picture of herd reproductive performance offers a starting point for improvements farmers can make.

When assessing performance, we use the '6-week in-calf rate' and the 'not-in-calf rate'. It is important that these measures are accurate and can be calculated consistently year after year.

Farmers can get their measures from their DairyNZ InCalf Fertility Focus Report, which can be run through their recording programme (e.g. MINDA, myHERD, Insight) or their vet with Infovot.

If farmers measure the reproductive performance of their herd with the best measures and at the best times, they will be able to:

- confidently compare their herd's reproductive performance to previous years and to the results achieved by top farmers, and
- assess whether the changes they have made to improve herd reproductive performance have worked.

6-week in-calf rate

Describes the percentage of cows in the milking herd that became pregnant in the first six weeks of the mating period.

Why we use it

These cows will calve early in the calving period next year which leads to more milk, more profit and more time for them to get ready for the following mating period. Many will be pregnant to an AB sire providing more replacement heifers, or the potential for a shorter AB period and it's a comparable figure between farms and seasons.

Not-in-calf rate

Tells you the percentage of the herd that failed to become pregnant during both the AB and bull mating periods. It includes all eligible animals regardless if they were pregnancy tested or not.

Why we shouldn't use an "empty rate"

Historically we used the 'empty rate' but an empty rate tends to only include the percentage of cows scanned and recorded as empty after pregnancy testing. It does not include cows that aren't tested for various reasons (e.g. they have died, been sold or culled, or simply weren't tested at the farmer's decision).

An empty rate essentially looks at a portion of the pregnancy tested animals which is usually only a portion of the whole herd. This creates an unfair comparison as the portion will vary across herds and seasons.

The '6-week in-calf rate' gives us a solid indicator that allows you to compare performance with other farms, and season to season.

What to do with the information

When talking about mating, or reproductive performance, be sure to ask farmers, “do you know your 6-week in-calf rate?” If they present you their ‘empty rate’ firstly ask them if they know their 6-week in-calf rate, but also ask them for the context. How long was their mating period? And how many cows did not get pregnancy tested? But generally, it is not advisable to report on an empty rate due to it being misleading.

Other terms you may encounter

AI: Artificial insemination used interchangeably with AB (artificial breeding) is the process by which semen is collected from a bull, diluted, and used to inseminate many cows. Trained technicians visit dairy farms in spring to do this job, or some farmers are trained and perform DIY insemination.

AB: Artificial breeding, mating cows by artificial insemination.

BV: Breeding values are an estimate of a cow or bull's genetic merit for a trait. Breeding values are calculated using information, which is collected by farmers, on-farm. When a heifer calf is born, her initial breeding values will be calculated as an average of her parents. This means that it is crucially important that the mother of a calf is identified correctly at birth.

CIDR: (Controlled Internal Drug Release) a hormonal device that helps illicit a cycle in a cow. CIDR is a brand name and should be avoided when reporting, ideally if referring to any “non-cycler treatment” or “synchronisations” that the farm has used CIDRs for, it's best to stick with the name of the process or refer to “hormonal treatment.”

Conception rate: the conception rates describe the percentage of inseminations that were successful, i.e. resulted in a positive pregnancy test. This isn't a figure used frequently for reporting.

Empty cow: is a cow who failed to get pregnant and is confirmed not to be pregnant by pregnancy testing. These cows are costly to farmers as if they are dried off they will not be able to come back into milk the following season, so they are generally culled, or “carried over” for a season, which means they will eat food but not return any income.

Heat detection: a combination of routine tasks, detection aids and recording systems selected and applied by a farmer to effectively determine when a cow shows signs of heat and therefore should be submitted for insemination.

Hybrid vigour: achieved by crossing different breeds during mating, e.g. putting a Jersey straw of semen into a Friesian cow, which creates additional improvement in the traits (e.g. fertility or milksolids production) above and beyond the expected performance of the sire and dam.

Submission rate: the 3-week submission rate tells you the percentage of cows submitted for insemination in the first 3 weeks of mating. It gives us an indication of how the herd was cycling and how the farm's heat detection skills were. But there are a lot of factors involved, when reporting it's important to focus on the facts “the herd's 3-week submission rate was X%” and not get bogged in detail.

For more information visit dairynz.co.nz/reproduction