

Compact calving: what to do

Active intervention may have a role in your strategy to achieve compact calving

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Compact calving around the time of turnout to pasture allows you to maximise the use of grass in the cow's diet. Teagasc has established a target of achieving 90% of the herd calving in the first six weeks after the planned start of calving – a figure well above the national average of 57%.

This article lists the four principles of achieving high dairy cow fertility and focuses on active intervention as an option based on recent research findings from Mary Herlihy and Stephen Butler of Teagasc Moorepark.

Why the 90% six-week calving target?

Using farm data, Moorepark researcher Laurence Shalloo has found that every 1% lower than target calving rate results in a €8.22 reduction in profit per cow. In other words, it's costing the average herd €264 per cow per year.

There are four key factors influencing compact calving.

•**Nutrition:** Appropriate nutrition during the dry period and in early lactation reflects itself in the body condition score of the dairy cow.

Pre-breeding, the herd average target body condition score is 2.9 and all cows should be between 2.75 and 3.25 for optimum fertility. If cows are thin now, consider milking them only once a day until condition score improves. Feeding more meal is unlikely to result in improvements in body condition score before breeding – it is more likely to increase milk yield.

•**Disease control:** Protocols for minimising the risk of disease in the dairy herd around breeding are widely available. Where possible, ensure that all vaccinations are completed at least a month before cows are bred.

•**Genetics:** Always select high fertility sub-index bulls irrespective of whether or not you are in spring or winter/liquid milk production. It's now possible to select teams of bulls with fertility sub-indices of greater than €160. In the long-term, this will result in more fertile cows with a longer productive lifespan.

•**Mating management:** A cow typically takes 30 to 35 days between calving and the first (often silent) heat. This first cycle is usually short and in 90% of cows, the first standing heat will be observed by around 45 days or so after calving.

As a result, the late calving cows will be slower to show heat after the breeding season begins. Heat lasts for an average of only nine hours and most standing heats begin at night so heat detection aids such as tail paint, scratch cards or vasectomised bulls are vital to achieving a high heat detection rate.

In addition to these four principles, rearing and management of the replacement heifer is critical. All replacement heifers should be bred in the first three weeks of the breeding season – synchronisation with prostaglandin will aid compactness.

Delaying breeding because heifers are underweight is costly. You still have time to get the heifers out to grass – from 1 March to 20 April, replacements have the potential to gain 50kg to 60kg liveweight outdoors.

Active intervention

Cows that calve early in the calving season are more likely to go back in calf. They have more time to recover from calving, are likely to be in positive energy balance and have started cycling again before the breeding season begins. Cows that are thin at



calving, lose more than half a unit of condition score between calving and breeding and calve later in the calving season are more at risk of culling.

The principle behind active intervention is that increasing submission rate in the first three weeks of the breeding season increases the likelihood of achieving a high six-week calving rate. Active intervention is a two-step process.

Step one

Metricheck all cows calved more than 14 days – approximately one month – before the breeding season begins. Up to 80% of cows will have some level of infection in the reproductive tract three weeks after calving, and this will decline to about 50% by seven weeks post-calving.

The proportion of cows with an infection (and the severity of that infection) will continue to decline as the time interval from calving increases. It is estimated that on Irish dairy farms an average of 20% of cows have a reproductive tract infection at the start of the breeding season.

These cows are slower to commence breeding, have a poorer chance of conceiving and are more likely to go in calf later or not at all. The use of the Metricheck device, which detects the presence of pus in the vaginal discharge, will help to identify cows with poor reproductive tract health. The Metricheck device and scores are presented in Figure 1.

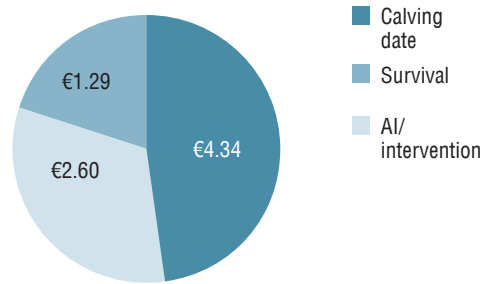
The Metricheck device itself is a rubber scoop approximately the same size as a squash ball. It is inserted into the vagina and against the mouth of the cervix.

As the device is withdrawn, dis-



Figure 2

Breakdown of where the costs are incurred (€/cow) per 1% lower six-week calving rate



charge located around the cervix is collected into the scoop.

This material is then scored from one to five (score one is clean mucus; scores two and three contain increasing amounts of pus; score four is almost all pus; score five is visually mostly pus and is also smelly).

If cows are examined one month before mating start date, cows that have a score of two or greater should be treated with Metricure. This intra-uterine pessary is a prescription-only medicine, available from your vet.

Step two

Begin pre-breeding heat detection at least three weeks before mating start date. Identify cows with tail paint removed at least once a week. This will allow you to identify non-cycling cows for veterinary intervention before the breeding season begins.

Once they are a minimum of 30 days calved, treat these cows with a progesterone-based timed AI programme (Progesterone-Ovsynch), which will ensure 100% submission rate to first AI. Conception rates will be comparable to non-treated cows, but cows will be bred earlier. A progesterone-based timed AI programme is presented in Figure 3.

Teagasc has established a target of achieving 90% of the herd calving in the first six weeks after the planned start of calving.

Figure 3

A 10-day progesterone-ovsynch timed AI programme for use on lactating dairy cows. This programme is suitable for cows that are at least 30 days calved.

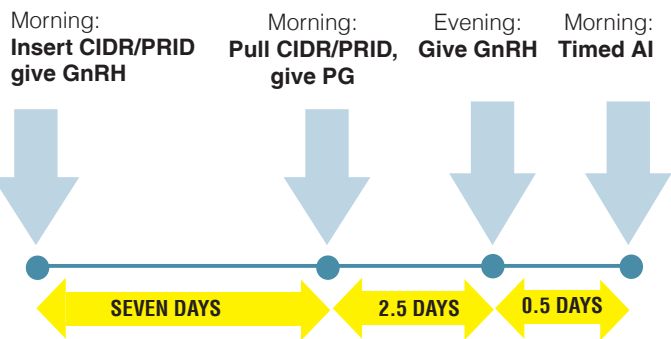
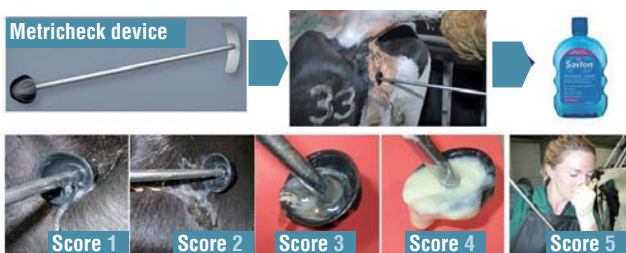


Figure 1



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