

DAIRY

April 2021

Dairy breeding focus

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Dairy Knowledge Transfer

Nationally, an average of 389,000 cows, or just over one-quarter of spring-calving dairy cows, calved between April and June in 2019 and 2020, with almost as many of the cows calving in May and June as in April. This is improving over time but the target is that only 10% of spring-calving cows should calve after April 1. Teagasc recommends a compact calving pattern is maintained in spring calving for dairy herds. The reason for this is because it offers the best alignment of pasture demand and pasture growth rates. Such systems also rely upon excellence in terms of breeding management. The key reproductive targets in seasonal calving dairy herds include:

- a 90% six-week calving rate;
- a 365-day calving interval; and,
- a planned empty rate of less than 8% at the end of a 12-week breeding season.

Breeding guidelines for spring 2021

- Know your herd's strengths and weaknesses. Refer to your Irish Cattle Breeding Federation (ICBF) herd Economic Breeding Index (EBI) scorecard to help establish what these are.
- Select a team of high-EBI AI bulls when breeding your dairy herd replacements. For a typical 100-cow dairy herd, a minimum of eight bulls should be used, with no more than 15% of matings to any one bull.
- Target high-EBI females (typically maiden heifers, and first and second calvers) to breed your next generation of dairy herd replacements. Lower-EBI cows should be bred to beef AI from the start of the breeding season.
- Use the Dairy Beef Index to select suitable beef AI sires for your dairy herd. A team of bulls should be selected that suits the various

dams in your herd (i.e., maiden heifers, young cows and mature cows) and the number of these that are selected for beef AI. Bulls with higher beef merit figures should be selected for older animals. Consider the use of vasectomised bulls in conjunction with beef AI as an alternative to beef stock bulls. Avoid using dairy 'sweeper' bulls.

- Use the ICBF HerdPlus Sire Advice Tool to help manage your breeding programme and simplify the process of sire selection. It will allocate your bulls to cows based on their strengths and weaknesses, as well as managing inbreeding. Cows designated for

beef AI should be flagged to ensure that only the best animals are used to breed dairy herd replacements. For more information on this tool, please speak to ICBF HerdPlus, your Teagasc advisor and/or your AI company.

- If using sexed semen, only use high-EBI sires and ensure that all sexed semen inseminations occur early in the breeding season. Any inseminations with Jersey or crossbred bulls should be conducted using sexed semen only. Pay careful attention to straw handling and AI procedures, as sexed semen contains fewer sperm, and these sperm are more fragile after the sorting process.

RESEARCH UPDATE

Heat detection

STEPHEN MOORE of Teagasc recently conducted research into heat detection in dairy cows.

Heat detection efficiency is an absolutely critical part of achieving a high submission rate. The cost of a missed heat has been recently estimated at €149.50 in a 12-week breeding season, due to a combination of slippage in calving date (worth €52.90) and €96.60 for the increased likelihood of a cow being empty at the end of the breeding season.

Recent research by Stephen Moore and colleagues at Teagasc Moorepark shows that dairy cows are more active than usual for a period of around 17 hours during heat, but that more than half of cows (55%) showed standing heat for less than eight hours (see **Figure 1**). This study highlights the importance of using heat detection aids such as tail paint or scratch

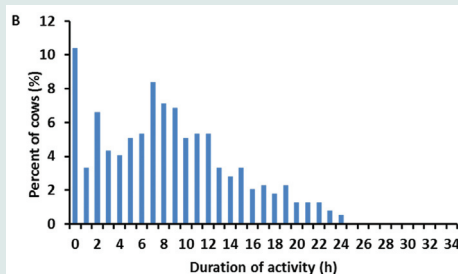


FIGURE 1: Duration of standing heat in dairy cows.
Source: Moore, et al., 2021, Theriogenology.

cards throughout the breeding season. Furthermore, because of the apparently random nature of when standing heat commences, Stephen suggests that cows need to be heat detected three times a day. Alternatively, Stephen suggests that automated systems may be useful to replace the labour associated with heat detection.

Table 1: Effect of selection intensity of cows and use of heifers to increase the EBI of the female team selected for the 2021 breeding season at Kildalton College.

Cow selection on EBI ranking	Number of cows	Average EBI	Advantage of selecting the cows	Number of heifers	Average EBI	Overall average of team bred	Cumulative advantage of also breeding maiden heifers
Herd average	119	€180	-	33	€225	€190	+€10
Top 80%	95	€190	+€10	33	€225	€199	+€19
Top 50%	60	€203	+€23	33	€225	€210	+€30

Cow selection

While much of the genetic gain is made by choosing suitable AI sires, selection of cows and replacement heifers to breed the next generation of replacements can also increase the rate of genetic gain, as shown for the Kildalton dairy herd in **Table 1**.

While the herd EBI is €180, selecting the top 80% of cows ranked by EBI increases the

average EBI of the cows bred to dairy AI by €10, while selecting the top 50% increases average cow EBI by €23. If in addition, we breed the maiden heifers, because they have an EBI of €225, the overall EBI of the group of cows and heifers increases by an average of €30. This shows that with careful cow selection and breeding the maiden heifers can further increase the EBI of the next generation of heifer calves born.

Breed maiden heifers to dairy AI

Breeding maiden dairy heifers can reduce the number of dairy breed bull calves. This is because the conception rate of maiden heifers is typically 10-15% higher than that of dairy cows. Calving ease is always a concern with maiden heifers. The Sire Advice programme mitigates this issue by identifying AI sires of low direct calving difficulty risk in heifers. While potentially smaller at birth, replacement heifer calves born to first calvers in the first three weeks of the calving season have a better chance of entering the dairy herd at two years of age. The work involved in heat detecting maiden heifers can be reduced by synchronisation. The



Identify sires of low direct calving difficulty risk in heifers.

simplest method is to AI maiden heifers to observed heat for one week and then at the start of the second week, inject unbred heifers with prostaglandin to synchronise their heats. Typically, injected heifers will all be bred within the following four to five days.



Breeding Week

Live online webinars, podcasts & videos

Monday, 15 March - Thursday, 18 March



Register Today!

All breeding week presentations are available on the Teagasc website.

Teagasc ICBF breeding week

With calving and breeding becoming increasingly concentrated on dairy farms, Teagasc and the ICBF ran a breeding week from

March 15-18. All of the webinars, podcasts and video clips that were prepared and presented during the week are still available to view on the Teagasc and ICBF websites. On the Teagasc website they can be accessed at: www.teagasc.ie/breedingweek.

HEALTH & SAFETY

Spreading and spraying hazards

Spraying and fertiliser and slurry spreading are high-risk jobs carried out in April. With fertiliser, always operate the machine controls from the tractor seat or another safely designed position. Watch out for trap zones, possible collapse of heavy loads and prevent musculoskeletal injury. Use and store pesticides safely. For slurry handling, always pick a windy day, open all doors and outlets, and keep all persons away when agitating and handling slurry. Take



care when working around slurry tank openings and cover when not in use. Make sure that the power drives of all machines are fully covered. Always stay well clear of machine moving parts. Pay particular attention to the safety of persons in farmyards and roadways, as tractor and machine movements can kill as a result of knockdowns. April is also the month to get ready for silage pit filling. Overfilling and excessive pit heights have become an increasing safety issue.

Stay clear of the moving parts of machinery.

