

When should you end the breeding season?

The bottom line on extended milking of late-spring calving cows

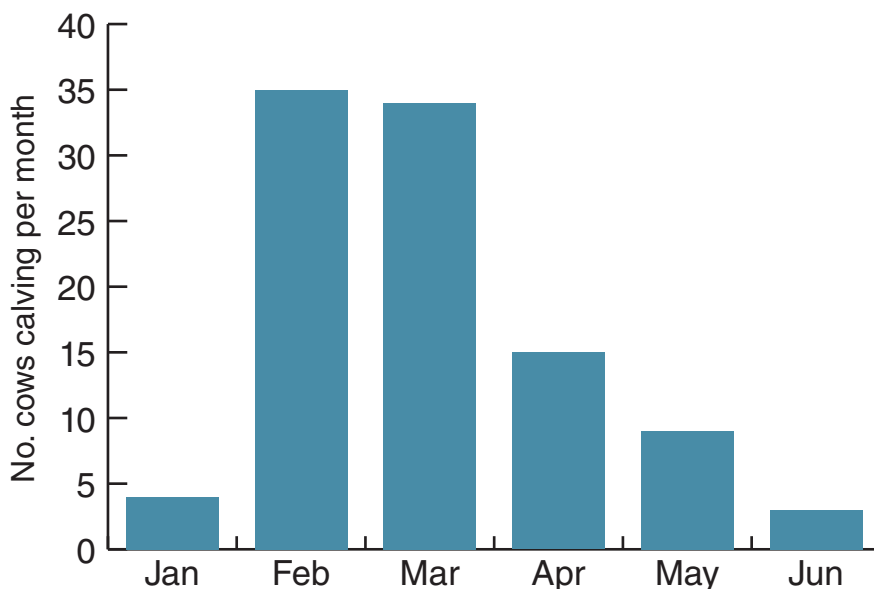
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Herds with a very spread out calving pattern generally can't afford to take a break from milking over the winter. Such patterns result in high cost systems of milk production with lower profit, so the additional margin is needed by the farming family. It is possible however to take steps to correct the calving pattern. This involves taking the following steps:

- Establish a date on which to end the breeding season this year. Ending the breeding season on July 20 will confine calving to April next year. If you continue to breed until later in the year, you will have later calving cows and the cycle will start all over again.
- Where calving pattern is spread out, it may be difficult to stop milking altogether for this winter so accept that this winter you will continue to milk the late calvers through the winter;
- Bring in extra home reared, or buy in, suitable early spring calving replacement heifers for next year. They will produce as much milk in the coming year as a late calver and are certainly more likely to remain in the herd calving in early spring in future years;
- Next spring either cull this year's late calvers from the parlour or, if accommodation and forage is available, finish them.

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. Teagasc's target is that only 10% of spring calving cows should calve

Figure 1: Average monthly calving pattern for a 100 cow dairy farm using national average calving data.



in the period – and those should calve in the month of April not in May and June.

This is to maximise the proportion of grazed grass in the cow's diet. To achieve this, February calving is best (see Table 1). Using months of calving data, Figure 1 presents the monthly calving profile for a 'national average' 100-cow herd.

The data in Figure 1 shows that, on average, 73% of the spring calving component of the national herd calve before the end of March. There is, however, a marked reluctance to call an end to the breeding season, with almost as many of the remaining cows calving in May and June combined as in April.

This presents a dilemma for farm-

ers. Should they wish to dry off the whole herd in mid-December, they reduce total milk sales from the herd because, based on the calving pattern detailed, the average cow has spent 274 days in milk production – far short of the targeted 305 days in milk.

Milking on over the winter however, as highlighted in Table 1, increases feed and forage costs and means that the farmer doesn't get a break from 365 days a year milking. Figure 2 shows the expected end of calving based on when the breeding season ends the following year.

The data in Figure 2 shows that where the decision is made to finish calving by 1 May or 1 June, the last inseminations should take place on or before the 20 July or 20 August respectively.

Estimating margin per cow from milk produced by extending lactation

Taking a planned 'end of milking' date of 15 December, the expected milk yields for cows with the potential to deliver 6,500l in a 305-day lacta-

Table 1: Feed and forage costs (€/cow) by month of calving.

Month calved	Grass	Silage	Concentrate	Total cost
Jan	3,836	1,141	697	€662
Feb	3,990	1,029	525	€608
Mar	3,598	1,358	588	€647
Apr	3,248	1,666	616	€674
May	2,702	1,960	833	€734
Jun	2,555	2,093	868	€753



tion and the residual milk remaining to be produced over the winter and through the following spring are presented in Table 2 for cows calving between January and June.

Using the calving profile presented for the 100 cow dairy herd in Figure 1, the cows calving from March onwards have the potential to remain in milk for between 30 and 120 more days before they are dried off.

Compared to the January and February calving cows that have had the opportunity to complete an average of 305 days in milk, the cows calving from March onwards outlined in Table 2 have only spent an average of 254 days in milk and so reduce the whole herd average to 274 days.

This means that should the farmer decide to stop milking on December 15, total milk production is reduced by over 46,000l.

Figure 2: Expected last calving date based on when the last cow is bred.

Breeding date	Expected calving date*
10 July	21 April
20 July	1 May
30 July	11 May
10 Aug	22 May
20 Aug	1 June
30 Aug	11 June
10 Sept	22 June

Our estimates for the balance compared to the increase in production costs that invariably follow between the value of this 'lost' milk

Table 2: Feed and forage costs (€/cow) by month of calving.

Month of calving	Milk produced by December 15 (litres/cow)	Milk yield from December 15 and the end of a 305-day lactation (litres/cow)
January	6,500	-
February	6,500	-
March	6,012	488
April	5,622	878
May	5,232	1,268
June	4,712	1,788

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overwinter production are presented in Table 3 and applied to the typical national average calving pattern for a 100-cow farm.

Other considerations

A number of factors need to be considered when deciding on whether to milk over the winter:

- Labour availability – is there labour available throughout the winter – typically we're talking about a 30-40 day break between 15 December and the start of the next milking. Not

too many spouses will be in favour of non-stop milking on one person farms.

- The number of cows available for overwinter milking – this will vary with herd size and calving pattern. If there are proportionately more May and June calving cows, the projected margin will be greater (however overall profitability will be lower). What is the minimum number of cows that justify milking-on across the winter on your farm?

Using a similar calving pattern for a 50-cow herd, the margin is €3,649 for milking a similar proportion of the herd through the winter.

Where calving pattern is excellent (70% calving in February, 20% in March, 10% of the herd calving in

April), the margin generated by milking overwinter is €1,490 per 100 cows averaging 6,500l per head in 305 days.

- What is the SCC status of the cows you're considering over-winter milking with? If it's already high, then it's not likely to decline during the winter.

- The milk price assumed was 32c/litre, every 1c/l change in milk price affects marginal profitability for the national average herd by almost €500 for the 100-cow farm.

- Forage quality needs to be high – a 5% reduction in forage DMD will reduce farm margin by approximately €370.

- Are there sufficient suitable facilities on farm to milk the cows over-winter?

Table 3: Estimated cost and projected margin per cow and per farm for a 100-cow farm using the 'national average' calving pattern from milking late-calving cows overwinter from December 15 until completion of a 305-day lactation.

Month calved	No. cows	Litres/cow	Extra days in milk	Milk value	Feed, forage and o/head costs	Margin for milking on (per cow)	Margin from milking
Mar	34	488	30	€156	€74	€82	€2,788
Apr	15	878	60	€281	€147	€134	€2,010
May	9	1,268	90	€406	€221	€185	€1,665
Jun	3	1,788	120	€572	€294	€278	€834
Total farm margin							€7,297

Assumptions included in the analysis are a milk price (base plus bonuses of 32c/l); additional feed and forage costs while in milk over a 'dry cow diet' of €1.95/day for 5kg of additional concentrate feed and 3kg DM of additional forage, 50c/cow/day for additional overhead costs.