Dairy Australia
InCalf
Your Levy at Work

Herd Assessment Pack

Length of mating period tool

Seasonal/split calving herds

What is this tool?

This is a **gap calculator** tool. It assesses the impact on herd reproductive performance of extending or reducing the length of the mating period.

Why use this tool?

In seasonal and split calving herds, most farmers choose mating periods of at least 6 weeks. Many herds will continue beyond this point using further AI and/or bull matings. Extending the length of the total mating period (AI period plus bull mating period) beyond 6 weeks will have no effect on the 6-week in-calf rate, but may significantly affect the not-in-calf rate at the end of mating.
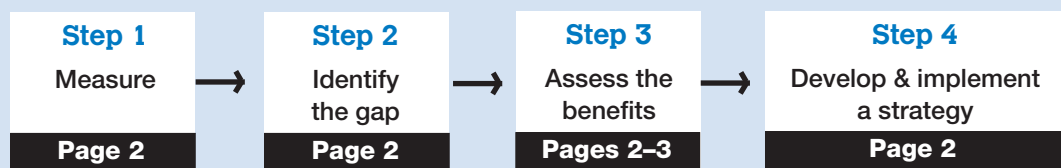
This tool predicts your herd's expected not-in-calf rate for the current length of mating period and compares it with an alternative period. The tool then enables you to assess the $ benefits of improved herd reproductive performance from changing the length of your mating period.

For more information, see *The InCalf Book*, Chapter 16: Managing your calving pattern – seasonal and split calving herds, and the *InCalf Fertility Focus Report*.

How to use this tool

Work through this tool's four basic steps.

To assess past/present/future performances

Step 1	Step 2	Step 3	Step 4
Measure	Identify the gap	Assess the benefits	Develop & implement a strategy
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When you see this symbol ✎, this means you need to fill in some information or do some calculations before continuing.

Step 1: Measure

✎ Current length of the mating period is: [   ] weeks (A)

Step 2: Identify the gap

✎ What alternative length mating period do you wish to consider? [   ] weeks (B)

✎

An alternative length of mating period (B)		*Your herd's current length of mating period* (A)		*Gap* (i.e. B minus A = C)
[ ] weeks	–	[ ] weeks	=	[ ] weeks (C)

>

Step 3: Assess the benefits

Part 1: Estimate the likely effect of closing the gap on herd reproductive performance

What is your 6-week in-calf rate from your InCalf Fertility Focus Report, or your estimated 6-week in-calf rate based on historical data? _____ % (D)

> **Note:** If you don't have an *InCalf Fertility Focus Report* with an actual 6-week in-calf rate figure or an estimate, select a typical value such as 60%. The typical InCalf research study herd has a 6-week in-calf rate of 60%.

Sliding across the appropriate row for your 6-week in-calf rate (D) in Table 1, below, calculate the effect on expected not-in-calf rate if you moved from your current mating period length to an alternative mating period length.

Expected not-in-calf rate for current mating period of _____ weeks (A): _____ % (E)

Expected not-in-calf rate for an alternative mating period of _____ weeks (B): _____ % (F)

Expected change in not-in-calf rate (F minus E): _____ % (G)

Table 1: Expected not-in-calf rate, given 6-week in-calf rate and length of mating period

6-week in-calf rate (D)	Total weeks of mating (AI period plus bull mating period)					
	9	12	15	18	21	24
20%	49%	32%	21%	15%	12%	10%
30%	43%	28%	20%	15%	12%	10%
40%	38%	25%	18%	14%	11%	10%
50%	32%	22%	16%	12%	11%	9%
60%	26%	18%	14%	11%	10%	9%
70%	21%	15%	12%	10%	9%	9%
80%	15%	12%	10%	9%	9%	8%
90%	9%	8%	8%	7%	7%	7%

> **For example:**
> If your 6-week in-calf rate is 60%, your current mating period 15 weeks and you considered an alternative mating period of 21 weeks, the likely effect on not-in-calf rate would be –4% (i.e. a decrease in not-in-calf rate from 14% to 10%).

Part 2: Determine the likely economic benefits of improved herd reproductive performance from closing the gap*

If a decrease in not-in-calf rate can be achieved by changing the length of mating period, this could provide benefits. This can be estimated by considering the $ value of a decrease in the not-in-calf rate.

For seasonal calving herds:

If no calving induction is used:

– Every 1% decrease in not-in-calf rate has a likely benefit of $570/100 cows/year.

If early calving induction is used:

– Every 1% decrease in not-in-calf rate has a likely benefit of $550/100 cows/year.

For split calving herds:

In split calving herds, by reducing the not-in-calf rate (i.e. after one mating period), the 2-period not-in-calf rate may also be reduced, but usually by a lesser amount.

For split calving herds, every 1% decrease in 2-period not-in-calf rate has a likely benefit of:

– $600/100 cows/year.

These $ values assume that by extending the mating period, more average producing cows become pregnant, allowing voluntary culling of low-producing cows that are due to calve late.

> **Note:** This tool assumes typical performance by your bull team. If you are achieving worse results than predicted here, one possible cause is poor bull performance and you should investigate the efficiency of your bull team. Refer to *The InCalf Book*, Chapter 12 on Bull Management starting on page 115, and the Bull Management Practices Tool, or consult an adviser. Also use other InCalf tools to assess other possible causes.
> Remember that correctly assessing bull management from reproductive information requires some expert interpretation and is best undertaken by an adviser experienced in this field.

Step 4) Develop & implement a strategy

Work closely with your adviser to develop your own personal farm strategy to achieve these benefits.

If you are considering increasing the length of the mating period, also consider the effects on management of having extra cows due to calve late in the calving period. These cows will either calve late or require induced calving.

* Based on use of standard herd figures in the InCalf economic benefits models (2004).