

# TIPS & TOOLS

## NORTHERN CATTLE

## What joining system should I use?

Ideally, beef breeding operations should be aiming to produce one well-grown weaner per breeder per year. This is a challenge as reproductive performance is affected by climate, seasonal variations, soil type, cattle breed, animal health and management. Consequently, several different mating systems are used in Australian beef herds:

- controlled joining
- restricted joining
- segregated joining
- continuous joining.

Why is choosing the right joining system so important?

- every breeding operation has different requirements; producers need to know what works best for their enterprise
- just because you've been using the same system for years doesn't mean it will always be the right match for your business - a cost-benefit analysis can determine what would work for you.

### Controlled joining

Controlled joining ensures the annual calf drop occurs at a specific time each year. The joining period is determined by the ideal time for calving and weaning and varies in length (determined by environment, herd performance and management intensity). On good land types in favourable environments, the joining period can be about six weeks (two cycles) for heifers and nine weeks (63 days) for adult breeders. In less favourable environments, 16 weeks may be more appropriate.

### Why use controlled joining?

The advantages are:

- ability to match peak lactation demands with optimum pasture availability
- more even lines of weaners to sell
- improved chance of getting more heifers to critical mating weight
- ease of management, including less mustering and decreased labour costs
- timely pregnancy diagnosis to inform management and marketing decisions
- reduced supplementation costs
- reduced calf loss (mustering during calving is avoided)
- improved bull and replacement heifer selection opportunities.



## Considerations

Controlled joining systems won't suit everyone. If <70% of mature breeders are calving every 12 months or are pregnant within four months of calving, another mating system should be considered. Important considerations include:

- determine when joining should start; the “green date” is useful if there are distinct wet and dry seasons each year, however, where pasture quality and availability is more uniform, other factors such as market timing will influence the decision
- a secure heifer paddock is essential to ensure replacement heifers are synchronised with the main breeder herd
- good mustering efficiency
- pregnancy test (at weaning) is an important strategy for culling empty breeders
- effective management of fertility diseases such as vibriosis, trichomoniasis, leptospirosis and pestivirus
- a secure bull paddock is preferable but not essential
- lack of breeder body condition is the principal cause of failure of controlled joining so good grazing and weaning management are required to ensure cattle maintain adequate body condition
- all bulls should undergo Bull Breeding Soundness Examinations prior to joining
- careful planning over several years is required to change from one mating system to another.

## Restricted joining

Restricted joining is where bulls are removed to prevent calving at particular times of the year, usually the middle of the dry season. It suits enterprises where:

- a tight calving period is unachievable
- cows are joined at a set time each year but over a longer period e.g. >5 months
- bulls can be removed from the herd.

### Why use restricted joining?

In regions where pregnancy rates in lactating cows are low, weaning at the first round of mustering can induce cows to cycle. If bulls are removed then, out of season calves are avoided. Advantages include:

- lower breeder mortality rates
- reduction in supplementation cost
- no out of season calves.

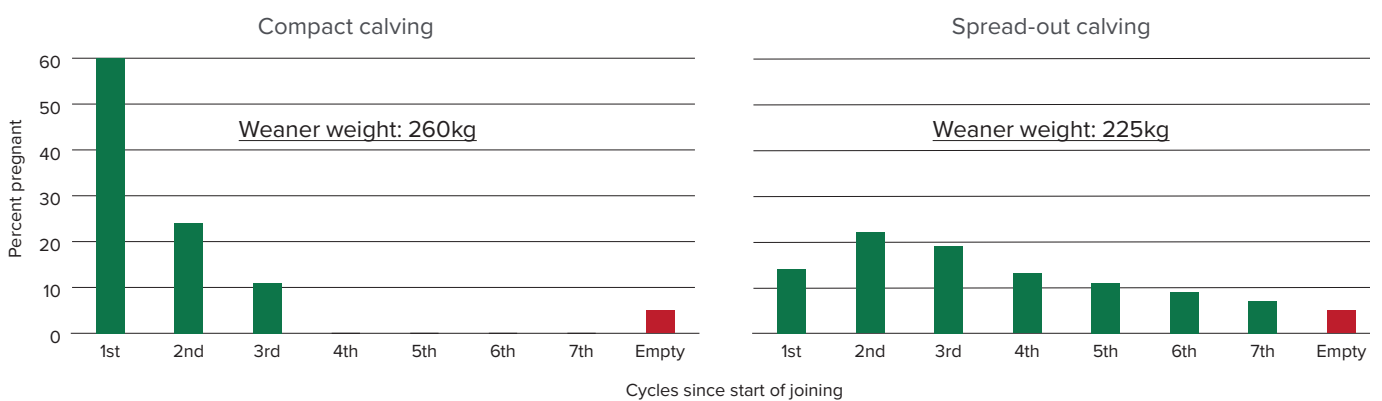
## Considerations

- it accommodates a larger proportion of breeders that are unable to have a calf every 12 months
- two rounds of mustering are still required
- larger variation in weaner weights.



There are clear benefits to establishing a compact calving pattern (see figure).

Compact calving versus spread-out calving – same pregnancy rate (95%) but 35kg difference in weaner weight



Source: Sykes and Stafford

This equates to 3,325kg of weaner weight in a 100-cow herd or approximately \$10,000 if weaners are valued at \$3/kg live weight.

## Segregated joining

Segregated breeder management is practised where it is difficult for most breeders to achieve a 12-month calving cycle, which is:

- usually in herds where the P4M (pregnant within four months of calving) rate is between 40–70%
- where there is high rainfall variability.

### Why use segregated joining?

The advantages of a segregated breeding system include:

- reduced supplementation costs
- reduced calf loss as mustering breeders with baby calves is avoided
- potential to improve herd efficiency by systematically identifying and culling non-productive rather than just older breeders
- removing bulls is unnecessary, except from maiden heifer paddocks
- decreased breeder mortality rates.

### Considerations

There are certain requirements for segregated joining. They are:

- adequate infrastructure and sufficient paddocks
- accurate foetal ageing to establish calving groups
- a good heifer program to ensure first-calf cows get off to the right start
- segregated joining is usually unsuitable if pregnancy rates in lactating cows is below 40–50%.

An example of getting started with segregation at an August muster – three groups established

Foetal age at August	Expected calving window	Management options at pregnancy test this year	Next year's management plan
5–7 months pregnant	Oct–Dec this year	Wean calves if not already done Move cows to new paddock	Wean in May
2–4 months pregnant	Jan –March next year	Wean calves – all will be at least four months old	Wean in August (or earlier if possible)
Not detectably pregnant	May–July next year	Non-lactating (fat) cows sold this year – wean all lactating cows October – cows stay in paddock	Cows over five years sold at end of February; young breeders pregnancy-diagnosed and pregnant ones retained

## Continuous joining

Continuous joining is also known as natural breeding or uncontrolled mating. Mustering is a major operational expense with two rounds of mustering usually undertaken – the first round occurring between March and May and the second between August and October.

### Considerations

- suits properties with uncontrolled surface waters and/or very low stocking rates (2–4 AE/km<sup>2</sup>) and minimal infrastructure
- good heifer management is still important to ensure replacement breeders get a good start
- goal is to minimise out of season calves as these breeders typically have lower re-conception rates and higher mortality rates
- the benefits of early weaning occur if performed prior to the end of June.

## Changing your system

Before changing systems, a cost-benefit analysis is advised as often additional infrastructure is required and key management strategies such as timing of weaning, disease management and bull removal need to be well-planned. Changes in joining periods usually need to be implemented gradually to minimise the impact on weaning rates during the changeover.

